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PRELIMINARY NOTES ON SKIN REACTIONS EXCITED BY VARIOUS BACTERIAL PROTEIDS IN CERTAIN VASOMOTOR DISTURBANCES OF THE UPPER AIR PASSAGES.

BY J. L. GOODALE, M.D., BOSTON.

IT HAS been shown for some years that an individual sensitized to a given proteid may exhibit a characteristic reaction, if the proteid is brought in a soluble form in sufficient concentration into contact with the mucous membranes, or introduced below the epidermis.

During the past two years 340 cases exhibiting vasomotor disturbances of the upper air passages have been examined, with reference to the possibility of eliciting a skin reaction by the application of various proteids to an abrasion or scratch of the skin. The results of these studies have shown that from a clinical standpoint we may divide such conditions into two main groups, the seasonal and the perennial. The seasonal group includes hay fever and hay asthma, where the exciting proteid is represented by the pollen of different species of plants, the occurrence of the symptoms being synchronous with the flowering of the plant in question. The perennial forms of vasomotor disturbance occur at any time of the year. Two groups are recognized at the present time, the first arising from the ingestion and the second from the inhalation of the proteid in question. The most typical example of the ingestion form is found in asthma from eggs. The inhalation type is represented most typically by horse asthma, the fine particles of the animal's hair exciting sneezing or asthmatic attacks, when they come into contact with the nasal mucous membrane.

The object of the present communication is to call attention to the probable existence of a third group of vasomotor disturbances, which may be termed infectious, in that their appearance seems to stand in relation to bacterial invasion of the upper air passages.

The individual has more or less constant sneezing, with outpouring of watery discharge,

and shows on examination of the nasal mucous membrane pallor and oedema. Such cases present frequently the picture of chronic sinusitis, with enlargement of the middle turbinates and often with polypoid degeneration of the mucous membrane of the sinuses. These conditions may exist independently or in association with asthma. The individual may go for considerable periods of time with little or no vasomotor disturbance, and yet with the advent of an acute infection of the nasal or bronchial mucous membrane he may exhibit the symptoms of sneezing or of asthma in a marked degree. The mucous membranes in these conditions do not show the reddening and pus formation which are characteristic of acute rhinitis and acute bronchitis, but present rather the typical picture of hay-fever.

From our knowledge of the influence of plant pollen and of the keratin proteid of animals upon the nasal mucous membranes, in sensitized individuals, it would appear possible that these perennial types of vasomotor disturbance may be caused by the sensitization of the individual to bacterial proteids which are liberated and come into contact with the cells of the mucous membrane, giving rise, when in sufficient amount, to anaphylactic manifestations. On this hypothesis such forms of vasomotor rhinitis and asthma, while occasioned primarily by the invasion of the mucous membranes through infecting microörganisms, present clinical manifestations in which inflammatory phenomena occasioned by bacterial toxines are subordinate to, or overlaid by, the anaphylactic phenomena induced by the proteid constituents of the bacterial bodies themselves.

No work as yet has been undertaken, to my knowledge, to determine the existence of this possibility, but if it should be established, such conditions would then immediately take their place in the system of classification as anaphylactic disturbances occasioned by the proteid of the schizomycetes. Following out this line of thought, if we should apply to a scratch on the skin the bacterial proteid in a soluble form to which the individual has been sensitized, we should expect the prompt development of a characteristic skin reaction in the same manner as that which results from plant pollen. Experiments were undertaken by the writer to determine the possible existence of such a phenomenon. Cultures were taken from eight cases of vasomotor rhinitis and of asthma of the apparently infectious type. The micro-organisms found were the staphylococcus p. aureus and albus and the pneumococcus. Cultures were grown also from laboratory stock of the micrococcus tetragenus, the micrococcus cereus flavus and the staphylococcus pyogenes citreus. Another organism having some of the characters of Friedländer's bacillus was isolated from a case of severe asthma. The cultures were grown on agar slants, when they were exposed to ether vapor, the object sought being to kill the micro-organisms without coagulation of their albuminous constituents. After remaining in ether vapor four days, the colonies were transferred to a 12% dilution of alcohol with water, in order to extract, if possible, the proteids of the bacteria. This alcoholic dilution was chosen as it has been found by the writer to preserve best the anaphylactogenic properties of pollen and keratin extracts. The quantity of bacteria was about one-third by volume that of the alcohol dilution added; so that, on centrifuging, the bacterial bodies occupied one-third and the fluid two-thirds of the tubes. After a week the fluids were tested on the skin of patients in the same manner as that employed for the diagnosis of plant sensitizations. Fifty cases of vasomotor rhinitis and of asthma were examined by the application of the staphylococcus albus, aureus and citreus, the micrococcus tetragenus and the cereus flavus with the following results.

In the cases presently to be described a positive skin reaction was obtained which developed in the following manner. (Immediately after the skin is scratched, a hyperemia frequently occurs which is plainly traumatic in character, appearing equally in the control scratches, and fading in the course of a few minutes.)

The positive skin reaction proceeds to develop in the course of 10 to 15 minutes, and ranges from a narrow band of hyperemia bordering the scratch to a hyperemic area of two centimeters in diameter. In the more marked reactions edema occurs which may attain a transverse diameter of one centimeter. The phenomena resemble those obtained in hay fever cases, from the application of the specific pollen, but show a preponderance of hyperemia in the proportion to the edema excited. Itching was not observed. In this connection it should be said that observations of the skin reaction in hay fever show that itching is found only in those skin disturbances which exceed the ones under consideration. After half an hour the reddening and edema begin to disappear, and usually at the end of an hour no trace of the disturbance is left, beyond the trauma occasioned by the scratch.

Staphylococcus p. albus. This organism was tested on the skin of 41 patients, in 29 of whom no reaction was elicited. Twelve cases gave a positive reaction.

Staphylococcus p. aureus. In 43 cases this organism gave 21 negative and 22 positive reactions.

An organism (serial No. 21) isolated from a severe case of asthma having some of the characteristics of Friedländer's bacillus gave 21 negative and one positive reaction. The patient from whom this was isolated did not give a definite reaction to it.

Staphylococcus p. citreus was tested in 18 cases, of which only one was positive.

The micrococcus tetragenus was tested in 18 cases, 16 being negative and two positive.

The above organisms have been found with varying degrees of frequency in acute inflammations of the upper air passages. In order to observe whether a non-pathogenic organism might excite reactions, the micrococcus cereus flavus was tested in 21 cases, all of which were negative.

In 20 cases of vasomotor rhinitis and asthma no reaction was obtained from the application of the bacterial extracts tested. A comparison of the nasal appearances and of the clinical symptoms present in these negative cases with those cases which gave positive reactions, showed no determinable points of difference which would permit generalization. At the present time no tests have been made with the other organisms whose causal relationship to the acute infections of the upper air passages is probable, such as the micrococcus catarrhalis, the influenza bacillus, streptococcus pyogenes and pneumococcus.

In 15 cases of various disturbances of the nose and throat, in which there was no history of vasomotor symptoms, tests were negative for all the organisms tested. Such cases ranged from nasal obstruction occasioned by septal deviations and hypertrophy of the mucous membrane to acute or chronic inflammations of the pharynx, tonsils and larynx.

ANALYSIS OF CASES.

CASE 1. B., boy 6. Asthma, perennial, three years with eczema. Treated by another physician last year with vaccines without relief. Nose and throat essentially negative. Marked reaction to ragweed, horse keratin, negative to casein and egg. Negative to staphylococcus p. albus extract, positive to aureus.

CASE 2. D., male, 20. Hayfever many years. Sneezing also in winter. Marked sensitization to ragweed. Positive reaction to staphylococcus p. albus, negative to aureus. Nose and throat negative, except for pallor and swelling of mucous membrane.

CASE 3. W., Man, 45. Spring and autumn hayfever, many years. Nose shows pallor and edema, otherwise negative. Positive for grass and ragweed. During past summer severe acute bronchitis with asthma. Since then slowly recovering. Positive for staphylococcus p. albus, negative to aureus, cereus, citreus, and tetragenus.

CASE 4. Mrs. K., 40. Asthma and sneezing, perennial, many years. Nose essentially negative. Suspicious reaction to albus, positive to aureus.

CASE 5. Mrs. M., 40. Vasomotor rhinitis, perennial. Sensitized to strawberries. Marked reaction to staphylococcus aureus, slight to albus.

CASE 6. Mrs. C., 50. Asthma many years, perennial. Polypoid degeneration both middle turbinates. Markedly positive to aureus, slight negative reaction to albus, positive to citreus and tetragenus.

CASE 7. Miss P., 30. Asthma many years, severe, perennial. Marked polypoid degeneration both middle turbinates. Marked positive reaction to both albus and aureus, negative to "21" (a culture recovered from a severe case of asthma, having the characters of Friedlander), to cereus, citreus and tetragenus.

CASE 8. T., boy, 5. Asthma since 2, perennial, coming of late every two or three weeks, lasting severely for 24 hours, with associated symptom of sneezing and nasal discharge, clearing up after two or three days. October 25, after an asthmatic attack, positive to egg and horse, negative to staphylococcus albus and aureus. November 6, positive reaction to aureus, slight or suspicious reaction to albus, negative to citreus. November 27, tested 10 days after an asthmatic attack, positive to aureus, negative to "21", citreus, tetragenus and albus.

CASE 9. Miss B., 21. Vasomotor rhinitis several years, intermittent, perennial, at times severe. Nose essentially normal except for pallor. Negative for grass and ragweed and domestic animals. Positive for orris root, symptoms increased on using face powders containing this. Negative for rice and talcum. Marked positive reaction to staphylococcus aureus. Negative to albus, "21", cereus, citreus and tetragenus.

CASE 10. Miss J. V. M. R., severe, perennial, but worse in August. Nasal mucous membrane normal. Positive reaction to ragweed and horse. Slight to egg albumen. Marked positive reaction to aureus, moderate to albus. Negative to "21" and cereus.

Case 11. K., male. Vasomotor rhinitis, at times associated with asthma, perennial. Slight polypoid degeneration mucous membrane. Positive to aureus, negative to albus, cereus, citreus, and tetragenus.

CASE 12. Miss M. Asthma, severe, many years, perennial. Marked polypoid degeneration of ethmoid regions, which have been curetted without relief. Positive to albus and to "21", negative to aureus, cereus, citreus, and tetragenus.

CASE 14. Mrs. Mr. Sneezing at times severe, perennial; normal, but pale mucous membrane. Positive to albus, negative to aureus. After cauterization of sensitive spots in nose, complete relief.

CASE 14. Mrs. W. Sneezing at times severe, perennial. Negative to albus, cereus, positive to aureus.

CASE 15. A., man, 50. Asthma at times severe, perennial. Marked polyoid degeneration ethmoids. Numerous polypi have been removed followed by relief of asthma. Positive to albus and aureus. Negative to "21", cereus, citreus, and tetragenus.

CASE 16. Mrs. C. Marked sneezing with asthma, at times severe, perennial. Advanced polypoid degeneration ethmoids and frontal. Curetting of ethmoid cells six months ago, followed by marked relief. Marked positive reaction to aureus, negative to albus, cereus and tetragenus.

CASE 17. C., boy, 15. Hayfever July to October. Sneezing also during winter. Positive to grasses and to ragweed. Marked positive reaction to aureus. negative to albus.

CASE 18. Mrs. H. Hayfever many years, June to August. Positive reaction to grasses and to ragweed. Nasal mucous membrane negative. Positive to aureus, negative to albus, "21", cereus, citreus, tetragenus.

CASE 19. Miss B., 21. Recurrent colds with asthmatic attacks. Nose negative. Marked reaction to ragweed, horse, and feathers from pillow. Intense cutaneous reaction from fish. Markedly positive to albus, positive to aureus, negative to "21", cereus, citreus and tetragenus.

CASE 20. H., boy, 12. Bronchial asthma since babyhood, each attack associated with acute rhinitis or laryngitis. Positive reaction to egg, negative to hen feathers and to casein. Positive to aureus, negative to albus, "21", cereus, citreus, and tetragenus.

CASE 21. B., girl, 6. Asthma many years. Nose negative. Marked reaction to albus and to aureus. No reaction from either of these extracts when heated to 60. Positive to "21". Negative to citreus and tetragenus.

CASE 22. Miss R. Sneezing years, perennial. Negative to albus markedly positive to aureus, the edema being over a centimeter in diameter, surrounded by marked hyperemia. Heating of this extract to 60 gives a suspicious reaction, in heating to 80 the reaction is negative. Negative to "21", cereus, citreus and tetragenus.

SUMMARY.

These observations show that in certain anaphylactic individuals exhibiting symptoms of perennial vasomotor disturbances of the upper air passages, an immediate and characteristic reaction is elicited by the application to a scratch of the skin of soluble extracts of staphylococcus p. albus, aureus, citreus, and micrococcus tetragenus; also by an as yet unidentified bacillus having some of the characters of Friedländer's bacillus. It is also shown that such individuals are not sensitized equally to these organisms, some patients reacting to one and some to another of the bacteria in question.

Certain cases of vasomotor disturbance clinically indistinguishable from the above showed no reaction to the organisms tested.

Individuals without vasomotor symptoms developed no reaction in any case.

It remains to be shown whether the vasomotor symptoms are actually due in these patients to an infection of the mucous membranes by the organism which gave the reaction on the skin. It is conceivable that the patients may have been sensitized to the special organism by a previous infection of the skin or mucous membranes. Further studies of these and other cases should be carried on by testing with the micrococcus catarrhalis, streptococcus pyogenes, pneumococcus and bacillus influenzae. Examinations should also be made before, during and after an acute attack with the organism suspected in order to observe whether a variation exists in the intensity of the skin reaction at different periods parallel with the degree of immunity of the individual.

This preliminary report is now published with the object of calling the attention of observers to a possible method of diagnosis, which may prove helpful in the examination of certain previously obscure forms of vasomotor rhinitis and of asthma. If it should be shown by further observations that a group of patients exists sensitized to certain organisms infecting the upper air passages, it would appear possible that the choice and administration of vaccines may be rendered more fruitful of results than has hitherto been the case.

I am indebted to Dr. C. G. Page for the preparation of the bacteriological material.

GUNSHOT FRACTURE OF THE LONG BONES.

BY CHANNING C. SIMMONS, M.D., BOSTON,

Surgeon to Out-Patients, Massachusetts General Hospital, Assistant in Surgery, Harvard Medical School.

DURING my service in the 22nd British General Hospital in France the past summer, of a little over six weeks, I had 310 new patients admitted to my wards. There were 238 cases of wounds caused by missiles and 61 of these were compound fractures of one or more bones; something over 25%. The other 72 patients were what might be termed cases of civil surgery, or injuries due to military service and not strictly speaking wounds.

In this paper I have excluded fractures of the skull, face, ribs, pelvis, tarsus, carpus and phalanges—16 in all. The remaining 45 cases of fracture of the long bones are alone considered. Eighteen of these presented fractures of more than one bone, and the bones injured were widely separated, such as the humerus and the fibula, humerus and radius, etc., in nine.

The bones of the upper extremity were injured much more often than those of the lower, the numbers being: upper extremity, 33; lower, 13 (one case is counted twice). The left arm was injured more often than the right: left, 33; right, 10. In the lower half of the body the right and left sides were wounded about equally. This is easily accounted for as the upper half of the body is more exposed than the lower, and in shooting the left arm is held forward thus receiving the bullet, but, fortunately, protecting the head and face.

The bones fractured are as follows: Humerus, 12: right, 4; left, 8 (In two of these the elbow joint was destroyed and the upper ends of the radius and ulna fractured). Forearm, 11: right, 5; left, 6. Metacarpals, 10: right, 1; left, 9. Femur, 4: all right. Lower leg, 7: right, 1; left, 6. Metatarsals, 2.

In the above enumeration, cases in which two or more bones were broken are counted only once and are placed in the group of the principal bone injured.

FIG. 1. Bullet wound fracture, shaft of humerus. The bone is badly shattered for a distance of five inches, but there is comparatively slight displacement. The wound of exit was large and there was much laceration of the soft parts.

TYPE OF FRACTURE.

The fractures varied very much in type, depending on the missile and portion of bone involved. All, of course, were compound. Thirty were caused by bullet wounds and 15 by fragments of shell casing. The fractures caused by shell fragments were either ordinary fractures with little or no comminution or comminuted fractures such as are seen in civil practice following severe trauma such as an automobile accident. Those caused by bullets were usually of the classical type. If the bullet injured the shaft of a long bone such as the femur or humerus, the wound of entrance was small, the amount of comminution great, the shaft often being entirely destroyed for a distance of two to four inches, and the wound of exit large with fragments of bone protruding and the soft parts badly lacerated. The injuries were much more severe in the femur and humerus than in the bones of the forearm and leg. In the latter, although comminution occurred, it was not as great and was more in the form of fissure fractures. Although in the humerus the comminution was great, the displacement and overriding was very slight. This may have been due to the laceration of the muscles resulting in temporary paralysis, but did not hold in fractures of the femur. Where the spongy ends of the bones were wounded there was little comminution and no displacement, but these observations are

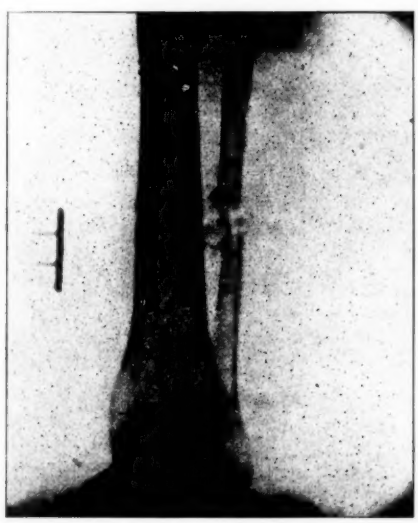

FIG. 2 Bullet wound fracture, both bones of the lower leg, with comparatively little comminution but many fissure fractures. Both the wounds of entrance and exit were small and healed without becoming infected.

FIG. 3. Bullet wound of hand, showing comminution of metacarpals and phalanges.

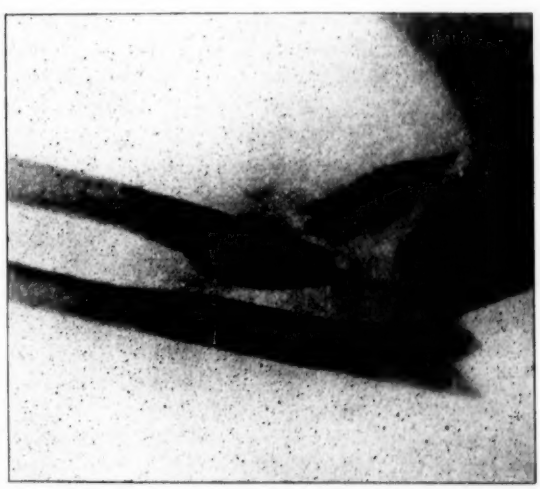

FIG. 4. Shell fracture, both bones of the forearm. There was one large wound on the outer side of the forearm. This patient also had a bullet wound of the abdomen and pneumonia.

based on a few cases. In two cases where the bullet passed through the head of the humerus, both the wounds of entrance and exit were small and the disability slight. Wounds of the lower end of the radius were similar but there was much swelling and many fissure fractures. Fractures of the metacarpals by bullets all showed much comminution but in nearly every instance the wounds of entrance and exit were small.

Wounds of the joints, other than the phalanges, occurred four times. In two cases the elbow

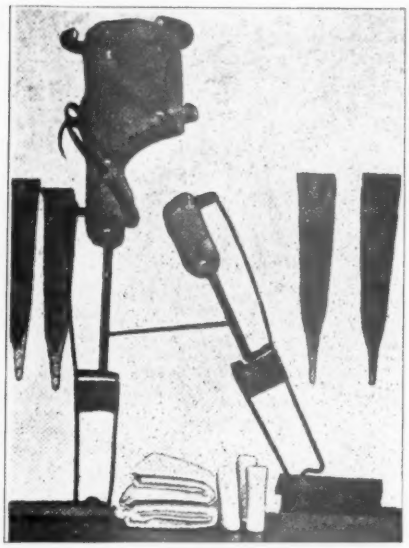

FIG. 5. Jones's modified abduction frame used by the British in treating fractures of the pelvis or thigh. It is somewhat comparable to the Bradford frame but rather cumbersome.*

joint was practically destroyed and in two cases there were fractures extending into the ankle joint.

SEPSIS.

In bullet wound fractures with small wounds of entrance and exit and little comminution, such as occurred in the head of the humerus or bones of the forearm, although there was much swelling, the wounds usually remained clean and the fractures healed in the ordinary manner. Where there was much comminution, or the wounds were large with much laceration of the soft parts, severe sepsis was the rule. In twelve cases there was infection of the wound with a gas-forming bacillus, besides the usual pyogenic germs. Two of these cases came to amputation, and one died. I do not consider the infection was alone responsible for the amputation in either, as in one, a fracture of the radius, the brachial artery was divided at the bend of the elbow, while in the other, a fractured fibula, and the fatal case, the man had lain in the rain between the trenches for 36 hours and also had a compound fracture of the humerus, pneumonia and a bloody diarrhoea.

COMPLICATIONS.

Many patients presented multiple injuries. Thus two cases had wounds, other than the fracture, infected with a gas-forming bacillus. Two had pneumonia and one of these also had a bullet wound of the abdomen. Four cases of fracture of the metacarpals had a division of one or more tendons of the fingers, while three were complicated by fractured phalanges, and one case of fractured metatarsal also had a badly comminuted fracture of the os calcis. One case of fracture of the tibia was complicated by a fracture of the rib and a wound of the arm, all three wounds being caused by different rifle bullets.

TREATMENT.

In treating these cases and in drawing deductions as to the best method of treatment the work was unsatisfactory. It was a rule of the hospital that a patient who could not be discharged practically well in three or four weeks should be sent to England at once. Therefore although at times a case could be kept for some weeks, in most instances, as soon as the initial swelling had gone down and the danger of severe sepsis passed, the patient was discharged. This was usually in two or three days and before any definite line of treatment for the fracture could be instituted.

In most cases the first problem was that of combating sepsis by free drainage, and, in cases with gas bacillus infection, removal of necrotic tissue, fragments of clothing, etc. Fractures of the forearm and lower leg in which both wounds of entrance and exit were small were considered clean and usually healed without sepsis. In frac-

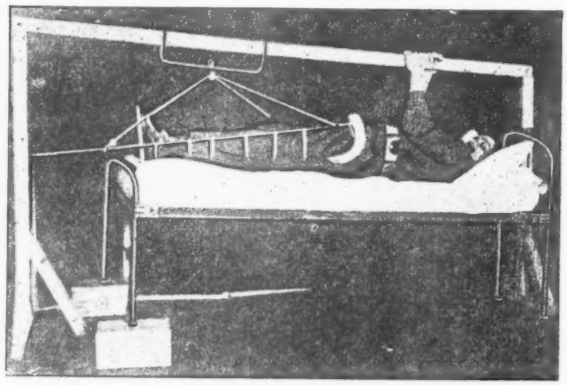

FIG. 6. A modified Thomas knee splint suspended from a Balkan support. The arrangement is somewhat similar to Smith's anterior splint. The patient can also assist the nurse while changing the sheets, etc., by lifting himself by the crossbar of the support.*

tures of the shaft of the humerus and thigh with much comminution and large wounds this was not to be expected, although one fracture of the thigh did remain clean.

The cases came to us from the Clearing Hospital in one of the many types of splints used in the British army. These splints are numberless, and while many are large and unwieldy, some

are very useful and answer the purpose of temporary immobilization well. The usual dressing on a fractured humerus when admitted to the hospital was an internal angular splint on the inner surface, not anterior, of the arm, a modification of a Thomas hip splint, or an external angular aluminum splint. Fractures of the femur were commonly in a Thomas hip splint, and fractures of the lower leg usually in a posterior metal splint with a foot piece.

It was often found necessary to leave these or other temporary splints on for several days as the swelling is usually great, and until this has subsided and the sepsis is overcome, it is useless to attempt any permanent dressing. In the humerus the temporary splints were quite satisfactory. It was often possible to swing the arm from a support over the bed, known as a Balkan splint, and use a constant drip apparatus in cases of gas bacillus infection. The English in fractures of the lower leg often use a splint similar to Smith's anterior splint which may also be swung to the Balkan support. The treatment was modified by the complications, such as the presence of other fractures or wounds, pneumonia, and severe infections.

I had only four cases of thigh fracture, three of which were severe, high, with much comminution, large wounds and gas bacillus infection. These were treated by extension on Bradford frames raised above the beds on blocks to allow a constant drip dressing to be used. A basin was placed under the buttocks to catch the water.

FIG. 7. Modified Thomas knee splint used to obtain extension in fracture of the shaft of the humerus.*

These fractures are much more comfortable and do better when the overriding is overcome by traction. Later, these cases were put up in plaster spicas with large windows to allow proper dressing of the wounds and metal bridges to strengthen the plaster. Plaster of Paris casts or splints in some form, made to suit the individual case, make the best permanent dressing for nearly all these fractures. When the fracture is of the lower leg with large wounds in the calf, it can be perfectly immobilized by applying a plaster boot, a circular cast at the knee and two or three metal bars across the defect, the ends of which can be incorporated in the plaster as it is put on. We found the Hawley table of great assistance in applying these plasters. In general I should say the average English surgeon

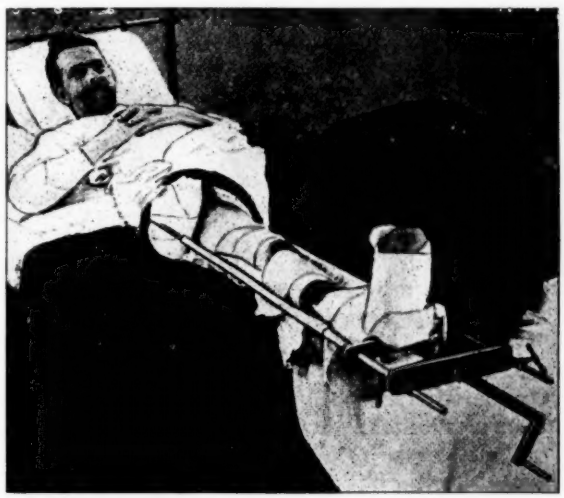

FIG. 8. Wallace's splint applied to a fractured thigh. There is a perineal crutch as in a Thomas knee splint. The foot is strapped to a foot piece and traction made by means of a screw.*

did not appreciate the value of plaster and did not know how to use it. My patients unfortunately were discharged to England too soon to have a plaster applied and I was able to use it in only nine cases, three fractures of the thigh, four fractures of the lower leg, one fracture of the forearm and in one fractured metacarpal. Some of these were put on by Dr. Steenburg the day I left and I did not see them, but he tells me they were very satisfactory. Clean fractures were treated as similar fractures would be in civil practice.

DRAINAGE.

Most of the wounds, where large, had some form of drainage introduced at the Clearing Hospital, usually a large rubber tube for which we substituted cigarette wicks or rubber tissue.

As to the desirability of removing the loose fragments of bone in the badly comminuted fractures, I did not follow them long enough to form an opinion. If the fragments were loose they were removed, but in most cases they were adherent to periosteum, and were left in the wound.

I personally had no case of nerve injury or secondary hemorrhage.

I think the average English surgeon is more radical and more ready to amputate in these severe compound fractures than we are. It is to

* FIGS. 5, 6, 7, and 8 are copied from a small book issued by the British Government on the treatment of injuries in war. They are introduced to show the type of splint used in the British army.

be regretted that one man could not have charge of the cases from the beginning as it is discouraging to work over a case and then learn that the limb was amputated after the patient's return to England. This did not happen to me personally as far as I know, but did to some of the men.

I hope in a year to be able to determine the results in some of these cases.

ANALYSIS OF CASES.

Humerus, 12 cases. Shaft: 7 cases; 4 bullet wounds, 3 shell casing. Displacement in all slight. All fractures more or less comminuted, those caused by bullet wounds being badly so. In bullet wounds, wound of entrance usually small and wound of exit large.

Head, 2 cases. Little comminution and no displacement. Both bullet wounds and wounds of entrance and exit small.

Lower End, 3 cases. In two of these the radius and ulna were also fractured and the joint practically destroyed. In one the internal condyle only was fractured. One bullet and two shell casing wounds.

Gas bacillus infection in the arm in four cases, and in a wound in the leg of a fifth.

Ulna, 2 cases (Other than the two mentioned above). Both bullet wounds somewhat comminuted, but without displacement.

Radius, 6 cases (Other than the two included with the cases of fractured humerus). Head, one case from shell fragment with slight displacement.

Shaft, 2 cases. Both bullet wounds. One comminuted and one with many fissure fractures.

Lower End, 3 cases. All bullet wounds. Wounds of entrance and exit small. Many fissure fractures but no displacement.

One case had infection with a gas bacillus and the brachial artery divided at the bend of the elbow and it was necessary to amputate for gangrene. A second case was complicated by a bullet wound of the lung

Both Bones, Forearm, 3 cases. Two shell, one bullet wound. All wounds large and fractures more or less comminuted. Much displacement in one complicated case due to a shell fragment.

One case complicated by a gas bacillus infection, and one by pneumonia and a bullet wound of the abdomen.

Metacarpals, 10 cases: Multiple, three. Fracture of one or more phalanges with partial disorganization of joint three cases. One or more tendons divided in four cases, one by a bullet, and three by fragments of shell. All fractures comminuted with more or less displacement,

Femur, 4 cases. All bullet wounds. Three fractured just below trochanter with much ocmminution and displacement. Wounds large and infected with a gas bacillus.

One fracture just above knee with slight comminution and no displacement. Both wounds of entrance and exit small. Bullet had only grazed bone.

Tibia, 3 cases. All bullet wounds, two small and one of moderate size. Two slightly comminuted with fissure fractures extending into ankle joint. One was complicated by a fractured astragalus and one with a fractured rib and a wound of the arm.

Fibula, 2 cases. Both shell wounds. One complicated by a gas bacillus infection of both legs and the right arm, the other by a compound fracture of the humerus and pneumonia. (This case was amputated for gangrene and the patient died.)

Both Bones, Leg, 2 cases. Both bullet wounds of the lower third of the leg, slightly comminuted but without displacement. The wounds in both were small but in one were infected by a gas bacillus.

Metatarsals, 2 cases: 1 bullet, 1 shell wound. Bullet wound fractured all five bones and was complicated by a gas bacillus infection. The shell wound also had a comminuted fracture of the os calcis.

ABNORMALITIES OF THE HEART IN INFECTIOUS DISEASES.*

BY CLIFFORD S. CHAPIN, M.D., GREAT BARRINGTON, MASS.

IN considering the state of the circulation in febrile conditions, it is necessary to bear in mind three facts, viz: that the heart's action is modified by an increase in temperature, that the heart reacts differently according to the toxins produced by the agent causing the fever, and finally, that the heart itself may be the seat of the conditions. Recent researches demonstrate conclusively the invasion of the heart by the specific organism in rheumatic fever, pneumonia, typhoid fever, diphtheria, erysipelas, influenza, and various septic infections. The results of such invasion are shown in the occurrence of endocarditis, myocarditis, and pericarditis. The symptoms evoked in such invasions are not always distinctive, and may resemble the symptoms induced in the heart by febrile conditions alone, or by toxins produced from other sources in the body. I dwell upon this because an attempt should always be made in febrile conditions to judge rightly the effects on the heart. One cannot but be struck, for instance, by the fact that people with previously seriously damaged hearts may pass scatheless through severe attacks of pneumonia or typhoid fever, while the young and vigorous may succumb after a few days' illness on account of the implication of the heart in the disease.

Another point to bear in mind is that in the invasion of the heart the specific organism rarely

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affects one tissue alone. In order to be exact and methodical, writers usually describe separately the symptoms of endocarditis, myocarditis and pericarditis. But if one reflects on the nature of the symptoms, such as the condition of the pulse, its strength, rate, and rhythm, the size of the heart, and the precordial distress—symptoms which are usually included in the description of endocarditis and pericarditis—it will be realized that they are not really the manifestations of endocarditis or pericarditis, but are the signs of a myocardial affection. One must consider carefully the murmurs arising in the course of a febrile attack, even in rheumatic fever, for the presence of a murmur may not necessarily mean the invasion of the mitral valves by the inflammatory process, but may be due to the tonicity of the poisoned heart muscle failing and giving rise to incompetence of the mitral orifice,—due, therefore, not to an endocardial, but to a myocardial affection. Endocarditis and pericarditis, both acute and chronic, bulk so largely in medical literature only because an abnormal sound invariably impresses the mind more than an abnormal sign perceptible by the other senses, and the easy recognition of the valvular murmur, and the friction sound has led to the associated symptoms being ascribed to the same lesion.

THE FEBRILE HEART.

By this term I mean the changes induced by the rise in temperature. The whole circulatory apparatus is remarkably sensitive to alterations in temperature, whether arising from external sources or due to changes within the body. The most striking of these is the change in rate—a rise in temperature increasing the rate, and a fall diminishing it. In the more simple febrile affections, there is a certain correspondence between the height of the temperature and the rate of the heart's contraction. Roughly speaking, there is an increase of from eight to ten beats with a rise of temperature of one degree F. This does not hold universally, but any considerable departure from this rule should always arouse watchfulness and suggest the possibility of other complications, such as the involvement of the heart in the infection.

In the simple febrile heart, the radial artery enlarges and the pulse remains of good strength, particularly during the diastolic phase of the cardiac cycle. The heart itself shows little change at first, beyond having its rate abnormally accelerated by exertion. The sounds are clear and distinct, and there is no increase in size. With long continuation of the fever, a certain amount of dilatation may arise. This most readily occurs on the right side of the heart, particularly if the pulmonary circulation is interfered with, as by a pneumonia or a pleuritic effusion, or by lying a long time on the back, as during the course of typhoid fever. The sounds may become feeble, or systolic murmurs may develop at the tricuspid and mitral orifices, and the characteristic pulsation of the right heart in the epigastrium become visible. In many of the minor febrile attacks, the course is modified by the nature of the toxins generated. A rise of a few degrees of temperature may provoke an undue frequency, 120-140, and with the subsidence of the temperature the rate may speedily fall to normal, leaving no ill effects.

ACUTE FEBRILE AFFECTIONS OF THE HEART.

The lesion induced by the invasion of the heart by specific organisms is rarely limited to one structure or tissue, so that it would be better to use the term carditis than to employ such misleading terms as endocarditis and pericarditis. This will be brought out more clearly when an analysis is made of the symptoms present in any given case; and I shall endeavor briefly to summarize the symptoms and try to apportion them to the particular tissues affected. I do this here, because by the appreciation of the nature of the primary lesion we are better able to understand the conditions found many years after, when the cicatrizing process has wrought other changes.

SYMPTOMS AND SIGNS IN MYOCARDITIS.

The rate and rhythm are the most easily recognized. Seeing that a rise of temperature alone induces an increased frequency, it is impossible to apportion the relative influence of this and of the myocardial infection. But many cases of moderate fever have a heart rate greatly accelerated, and then we can infer there is some other factor at work than the rise in temperature. It would be of great interest to know the mechanism by which increased rate is brought about by myocardial lesions, whether through nerve stimulation arising reflexly from the inflamed tissue, or from the increased irritability of the muscle, particularly of the tissue in which the stimulus for contraction arises. But here such an inquiry would be purely speculative.

Changes in rhythm come under a different category, and in irregularity we often get a clue to the changes that are going on in the muscle. The arrhythmia due to purely nervous influences is generally abolished during the excitation of the heart by the fever—the chief exception being the arrhythmia due to vagus stimulation in affections of the brain, as in tubercular meningitis.

The most characteristic evidence of direct damage done to the muscle of the heart is the irregularity or pulse intermission, due to the dropping out of ventricular systoles, because of the damage done the auriculo-ventricular bundle by the lesion.

Evidences of myocardial affections can be found in the changes in the size of the heart. It is well to remember that the size of the heart

may very speedily become increased in the course of a febrile affection of the heart, as in rheumatic fever, diphtheria, etc. In such cases, the sounds often become very faint, and soft murmurs may arise at the mitral and tricuspid orifices, and simulate valvular changes.

SYMPTOMS AND SIGNS IN ENDOCARDITIS.

The only direct evidence of acute endocarditis is the presence of murmurs at one or other orifice of the heart. For practical purposes there are only two murmurs which need to be considered here, viz: a mitral systolic murmur and an aortic diastolic. It is not always easy to tell whether the appearance of a murmur during a febrile attack is due to involvement of the mitral valve in an endocarditic process, or to the relaxation of the muscle supporting the orifice. A diastolic aortic murmur is, as a rule, diagnostic of the involvement of the aortic valve in some destructive process. At first this murmur is so faint that one is simply conscious of the fact that the sound does not end with sufficient abruptness. Gradually, however, this passes into a very soft short whiff at the end of the second sound, becoming day by day more marked.

In the vast majority of cases, the murmurs due to endocarditis are not definitely recognized until some time after the subsidence of the fever —when the sclerosis sets in. This is particularly the case with presystolic mitral murmurs, which are never recognized during the acute condition which induces the lesion, unless there is narrowing of the mitral orifice on account of vegetations. The formation of vegetations at the mitral and aortic orifices may give rise to murmurs, indistinguishable from those due to destruction of the cusps. The presence of a musical murmur may generally be assumed, particularly in acute cases, to be due to a vegetation. An attack of hemiplegia during an acute febrile condition may generally be ascribed to an infarct from a valvular vegetation, and infarcts in any other organ may be assumed to arise from the same cause.

SYMPTOMS AND SIGNS IN PERICARDITIS.

Until the introduction of auscultation, dry pericarditis was a disease discovered on the post-mortem table only. The only evidence we have of its presence is the characteristic superficial to-and-fro murmur produced by the movements of the heart. Its discovery is usually accidental, and made when the heart is examined as a matter of routine. There is no other distinctive sign associated with it, and, in marked contrast to dry pleurisy, it is essentially a painless complaint. When pains are associated with its presence, it will invariably be found that there is evidence of a myocardial affection.

Pericarditis may arise in the course of a number of chronic complaints, as in diabetes and Bright's disease, or in the course of an acute disease, as pneumonia or rheumatic fever. Sometimes one comes across it quite accidentally—the patient, not feeling quite well, consults his doctor, and in the course of an examination this is detected. Such patients may go quietly about their occupation for many weeks with a well-marked to-and-fro murmur, and suffer no further trouble.

When effusion takes place into the pericardial sac, there is an increase in the area of cardiac dullness, which assumes a somewhat characteristic shape. It reaches up to or above the second rib, and if the area be mapped out, it will have a somewhat pear-shaped character. There is an absence of the heart's movements at the lower point to the left, and this should always arouse the suspicion of effusion where there is an increase in the heart's dullness. Ewart describes a small area of dullness behind at the base of the left lung. This is important to remember, for an increase in the size of this area may cause an extensive pericardial effusion to simulate fluid in the pleural cavity.

The question of pericardial effusion, embarrassing the work of the heart, has arisen on account of the results of experimentally distending the sac with fluid. We do not find any very serious embarrassment of the heart from extensive pericardial effusion, the reason being, probably, that while the normal pericardium is a more or less inelastic bag, with the inflammatory invasion it becomes distensible, and therefore able to accommodate an enormous amount of fluid with little embarrassment to the heart.

THE HEART IN RHEUMATIC FEVER.

It is the frequent implication of the heart which makes this one of the most formidable diseases in temperate climates; and the study of the heart affections is one of much practical importance. Experimental evidence has shown that a diplococcus, which is present in human cardiac tissues damaged by rheumatic fever, can produce endocarditis, pericarditis, and fatty degeneration of the myocardium with dilatation of the heart and formation of submiliary nodules both in rabbits and monkeys. These animals may sometimes recover from this acute endocarditis and a healing lesion be found later.

The chief cardiac lesions in man are: (1) acute dilatation of the heart, (2) endocarditis, and (3) pericarditis. In almost all the severe cases, however, the damage is a complex one, that is to say, the endocardium, myocardium and pericardium are affected, and to this condition the term "carditis" is often applied.

There are very considerable differences in the development of these lesions. Sometimes the attack is rapid and severe, and in a short time the heart is terribly injured; in others there is an insidious onset and a gradual down-hill progress; while in others the damage is as fleeting as that to the joints. It is accordingly most essential to recognize the earliest warning of heart disease, in order that the patient may be at once

placed under strict treatment. This warning is, as a rule, acute dilatation of the heart. The evidences of it are the following: (1) A slight rise in the frequency of the pulse rate. (2) The cardiac impulse becomes diffuse and extends beyond the vertical nipple line. (3) The area of deep or relative cardiac dullness is increased to the left, and sometimes to the right and upward. (4) The first sound at the apex becomes short, and the second sound in the pulmonary area is accentuated. (5) A soft systolic murmur can, not infrequently, be detected internal to the left vertical nipple line. These are the earliest signs of rheumatic heart disease, and this dilatation may entirely disappear.

Acute Dilatation. The rapidity with which dilatation may occur is most remarkable, and this is true of both the adult and the child. The explanation, however, is not easy unless it be associated with some sudden damage to the cardiac nerves and loss of muscular tone. The patient shows but few signs of cardiac dilatation unless it is acute and severe. If he has not been confined to bed there is shortness of breath on exertion, with a sensation of faintness and weakness. When more severe there are muscular weakness, pallor, restlessness, and well-marked dyspnea.

Endocarditis. The valves on the left side suffer more than those on the right, although in childhood the tricuspid valve is not infrequently damaged to a small degree. Acute simple endocarditis gives rise to but few symptoms, and it frequently happens that a patient comes under observation with a valvular lesion of which he can give no clear history. On this account there are a few more important rules in medicine than "in all cases of suspected rheumatism to examine the heart repeatedly." A rise in temperature of a degree or more, accompanied with pain in the chest, palpitation, and breathlessness, are suggestive, and examination of the heart may show that the action is unduly rapid, and that there is some dilatation.

The malignant type of endocarditis is to be suspected when there is a persistent and irregular fever and the appearance of the patient suggests severe poisoning. In many cases there is a history of previous attacks of cardiac rheumatism, and in some, rigors occur, which may be repeated and yet no abscess formation result. One striking feature in the heart is the persistent excitement. The cardiac murmurs may be unusually loud, or vary in character. Anemia, sweating, diarrhea, infarction, and purpura are also important symptoms of this type. Some of these cases run a very protracted course, extending over months; others prove rapidly fatal. In other cases the diagnosis between simple and malignant endocarditis may hang in the balance for weeks and then the disease may slowly subside, leaving much damage. The malignant type is rare in childhood.

Pericarditis. The most serious form of heart disease in rheumatism, next to malignant endocarditis, is pericarditis—not so much on account of its intrinsic harmfulness as on account of the severe type of infection which accompanies it, and the involvement of the myocardium. It is more frequent in childhood than in adult life. The most characteristic examples occur in the first week of the rheumatic attack; but there is no period when it may not appear.

The early symptoms of acute pericarditis are a rise of temperature, precordial pain, and dyspnea. The pulse is excited and the tension low. Pericardial friction is usually detected within twenty-four hours, at the base of the heart, and may rapidly become audible over the entire cardiac area. A more unusual symptom is delirium. The distress in the adult is great, and shows itself in the anxious face and orthopnea; on the other hand, some children show curiously little discomfort. The great enlargement of precordial dulness, so frequent in pericarditis, is chiefly the result of dilatation, and not of a large effusion. Ill-omened symptoms are vomiting, restlessness, delirium and lividity, with progressive signs of cardiac failure. A first attack is not as a rule fatal, but pericarditis is the most frequent cause of death in rheumatic fever.

Attacks of rheumatic fever may complete their course with no affection of the heart. In some instances the heart may be affected and give rise to no positive sign; and it may be only after months or years that a murmur or irregular action indicates that there must have been some affection of the heart which the symptoms of the subsequent sclerosing process have revealed.

While the foregoing gives briefly the main points of the heart affection in rheumatic fever, it also holds good for the condition in other infectious diseases.

THE HEART IN PNEUMONIA.

The examination of the heart itself, aside from the rate, may reveal nothing abnormal, but very often, especially during the latter part of the attack, we find functional murmurs either with or without dilatation. In this latter condition the right side is the greater sufferer by reason of the obstruction to the pulmonary circulation.

Cardiac weakness in pneumonia may arise from a number of causes; the commonest and most important of these are toxemia, extensive pulmonary consolidation, and hyperpyrexia. The first of these may result either from a direct action of the poison upon the muscle itself—cloudy swelling, myocarditis—or indirectly through vasomotor paresis. Sudden syncope may occur at any time in the course, although this is rare. The pulse is rapid, small in volume, and the attacks, even in patients who recover, may last six or even twelve hours. The usual symptoms of heart weakness, including cyanosis, dyspnea, cold extremities, and ner-

vous derangements, occur. Critical collapse, or at least a tendency toward it, is quite common. It sometimes appears at the beginning of the crisis, more rarely in the midst of it. It is accompanied by chilliness, cold perspiration, dyspnea, cyanosis, a weak rapid irregular pulse, mental incoherence and subnormal temperature. With judicious stimulation, these attacks are usually passed in safety, although death in the course of them is by no means unknown. Collapse coming on a day or two after the crisis is much more grave, being usually an indication that the myocardium has sustained serious damage. It sometimes happens that the patient falls back dead, after sitting up, although there had been no indications of danger. In such cases one naturally thinks of an acute cardiac dilatation or a pulmonary thrombosis as the cause of death. There are two conditions that are looked upon as signs of grave complications in pneumonia—the occurrence of an occasional irregularity before the crisis, and a pulse rate of over 140 per minute. Neither of these is necessarily a fatal symptom.

THE HEART IN DIPHTHERIA.

The complications here are so varied that danger may arise in several quarters. The heart muscle itself may be the seat of profound changes, the symptoms somewhat resembling those in rheumatic fever. But in diphtheria, more than in any other acute disease, there is a tendency to fatal syncope. The gravest sequel, and the one responsible for the greatest number of deaths occurring in apparent convalescence, is the effect of the toxin on the heart. In every case of diphtheria, mild or severe, the possibility of heart complications should always be in the mind of the physician, and frequent examinations should be a routine, no matter whether there are any symptoms referable to this organ or not. The heart complications are a phase of the degenerative changes in the nervous system, although in some of the fatal cases a degenerative change in the heart muscle has been found. Murmurs, usually systolic, are observed in the vast majority of patients with diphtheria. Vomiting may draw attention to a cardiac complication. Before this symptom there is usually a softening of the first sound and shortening of the diastolic pause. Pallor and restlessness are very early and grave symptoms. There is no edema and cyanosis is uncommon. The heart may or may not show dilatation, but gallop rhythm or signs of heart block are present. The pulse may remain normal, but more often is rapid. When a sudden drop in the pulse occurs, the condition is very serious.

The following conclusions with reference to heart complications in diphtheria are of interest, the special points being: (1) The great frequency of heart murmurs and irregularity of the pulse. The prognosis does not depend on the mere presence of these signs, but upon the severity of the infection, the length of time without treatment, the rate and degree of irregularity of the pulse, and the presence of the graver signs of cardiac disturbance. (2) Moderate disturbance of the heart is very common; severe complications are infrequent. (3) Frequent examinations of the heart are necessary really to determine its condition, because of the marked changes in rhythm from one hour to the next. (4) Gallop rhythm, late vomiting, and epigastric pain and tenderness are important as danger signals of severe heart complications. The association of late vomiting with gallop rhythm renders the outlook almost hopeless. (5) Antitoxin does not affect the heart unfavorably, but, on the other hand, its early use prevents the appearance of grave heart complication. (6) Bronchopneumonia is a more frequent fatal complication of diphtheria than heart disease; sudden death from heart disease is very rare when patients are kept in bed for a proper period. (7) Prolonged rest in bed is necessary in all severe cases; it is not necessary to keep all patients in bed who have cardiac murmurs and a pulse rate which is somewhat irregular and increased in rate. One should be governed by the stage of the illness and the general condition. If no serious heart trouble has developed within four weeks, the patients are usually safe from this complication (8) Heart murmurs and irregularity are of long duration in many cases, and make it necessary to watch the condition of the heart long after convalescence in all severe cases.

THE HEART IN SCARLET FEVER.

Endocarditis and pericarditis are special complications in scarlet fever. Two types are recognized: septic and simple or toxic, but the distinction is clinical and not clearly drawn. Septic endocarditis is rare and practically occurs only in severe attacks complicated with throat sepsis. Simple endocarditis may be due to toxins acting on the endothelium, but the trend of opinion is that there is a local infection with bacteria of less virulence than those causing the septic form. The time of occurrence is especially in the second and third week of the attack. Fever may occur at the outset but is not infrequently absent. A rising pulse rate is the commonest early sign, except murmurs. There is usually some dilatation with increase of the area of dullness. Endocarditis is very easily overlooked, and care should be taken to examine the heart frequently. Murmurs vary much in intensity and duration, and as "functional murmurs" are common, early differential diagnosis is not always possible.

THE HEART IN TYPHOID FEVER.

The heart cannot be said to show any changes peculiar to typhoid fever. The variations in the rate, character of the sounds, etc., may be due to several factors, such as fever, toxemia, vasomotor paralysis with a secondary effect on the

heart muscle, and myocardial changes. Dilatation may be present, but it is not often marked, and is more common on the left than on the right side. With the progress of the attack the impulse usually becomes feeble and the apex beat may be diffuse or completely absent. The heart sounds may be normal and unchanged throughout, as is seen in mild attacks, but as a rule some change is noted. The first sound usually becomes feebler, and may have a muffled uncertain quality, which may progress until it becomes inaudible. The second sound may become sharper and more accentuated as the disease progresses. Endocarditis and pericarditis are rare. To lay down definite rules by which myocarditis may be recognized is not possible. The appearance of a systolic murmur is suggestive of myocarditis but may be due to other causes. The changes noted in convalescence, either in the way of marked rapidity or of slowing of the pulse-rate, occasional intermittency or irregularity, suggest myocardial changes.

THE HEART IN SEPTIC INFECTIONS.

There are a great many septic infections that injure the heart, either from toxemia or by a specific organism invading the heart. In the latter case, the endocardium is frequently attacked, and the disease is then described as septic endocarditis. In these cases, there is also invasion of the myocardium, and it is the profound depression of the heart muscle which is often the grave element. In pyemia and puerperal septicemia, we get conditions of profound gravity caused by certain organisms. The *pulse* in these cases gives the most trustworthy information. It is small, soft, and easily compressed, not necessarily very rapid, and the temperature need not be high (101-2°). The heart shows little change except that the sounds are feeble, the patient is lethargic, the face is slightly sallow or pale and sunken. The aspect of the patient, taken with the rate of the pulse, affords assistance in recognizing the condition. I dwell upon this because some are unnecessarily frightened at the occurrence of a post-partum rise of temperature of trivial significance, while others do not recognize the significance of the heart symptoms when danger actually arises.

In acute disease due to some infective agent, the prognosis depends upon the nature and intensity of the infection. So far as the heart is concerned, judgment must be suspended until the cessation of the active lesion. As these effects may linger on for some time, it is manifestly impossible to do more than lay down certain general rules. After acute infections, such as rheumatic fever, and after subacute affections, no prognosis should be given until all the symptoms of the original affection have disappeared. If the heart has resumed its normal aspect, in size, rate, and rhythm, we may gather that the damage has been slight and that the future is hopeful. The presence of the youthful irregularity may be a further guarantee of the integrity of the myocardium. If some evidence of damage persists, then we must recognize this, lest it be due to the persistence of some low inflammatory condition which leads to the formation of fibrous changes, in which case it may be a long while before the changes are sufficiently stationary to permit of an opinion.

When the real nature of the trouble is appreciated in acute affections of the heart, it will be realized how powerless we are directly to modify the disease process. In vaccine or serum therapy, there is a promise of a specific remedy in each case to meet the special organism causing the mischief. But so far our efforts have been attended with little success.

THE HEART IN PREGNANCY.*

By Erwin H. Taylor, M.D., Pittsfield, Mass.

It was formerly thought that the heart became hypertrophied during pregnancy, but more recent investigation has shown that this is not the case, and that what was formerly considered an enlargement is in reality only a displacement of the heart, caused by the pressure of the growing uterus crowding up against the diaphragm.

In every pregnant woman the heart should be examined the first time that the patient comes under the observation of the attending physician, to determine whether there is any disease. If any trouble is found, repeated examinations should be made as often as deemed necessary to direct proper treatment.

In most cases valvular diseases of the heart are present before the patient becomes pregnant, but they may occur during pregnancy from septic infection or rheumatism.

Valvular lesions of the heart, if not well compensated, are very serious for the pregnant woman, and end fatally in a large percentage of cases.

Many complications may arise, one of the most frequent of which is abortion. This may occur as a result of placental apoplexy or from an accumulation of carbon dioxide in the blood, which irritates the uterine muscle.

Other complications of importance to be feared are fresh outbreaks of endocarditis, renal congestion, fatty degeneration of the papillary muscles of the heart, and, especially, congestion of the lungs.

Mitral lesions are considered the most serious in pregnancy, and Hirst places the mortality as high as 53%.

Well compensated heart lesions may cause no more trouble as a result of pregnancy than a normal heart, but all such cases should be closely watched. As long as compensation is good no

* Read before the Berkshire District Medical Society, June 24, 1915, as part of a Symposium on Heart Disease.

special treatment is necessary, but on the first appearance of signs of decompensation, active treatment should be instituted.

The urine should be examined more frequently in pregnancy with cardiac complications than in the normal woman. Just how frequently depends upon the severity of the case, but certainly as often as two weeks in all cases. The patient should be instructed to take a simple diet, with a minimum of meat and sweets and foods most likely to produce flatulence. She should avoid overwork, and rest as much as possible, especially in the recumbent position. Worry and excitement should be guarded against as far as possible.

The most dangerous time is just after the birth of the child, when an extra quantity of blood is suddenly thrown back upon the heart. Experience shows that when the discharge of blood is profuse heart failure seldom occurs, and thus a reasonable loss of blood should be encouraged in these cases. In case of threatened heart failure, and if not much blood has been lost during labor, venesection is the best form of treatment, and from 8 to 16 ounces of blood should be withdrawn. Nitroglycerin hypodermically is the best heart stimulant during labor and directly after.

Digitalis should be used hypodermically or intravenously during the first stage of labor, in good doses. One of the most effective ways of employing digitalis in cases of this kind, where prompt action is important, is to use the Tr. of digitalis in normal salt solution, intravenously.

In serious cases deep incisions may be made in the cervix and dilatation accomplished as rapidly as possible. Forceps should then be used to deliver the child.

It is claimed that reduced intra-abdominal pressure after expulsion of the child from the uterus leads to death post partum. This reduced pressure may be partly overcome by placing a sand bag on the abdomen.

In case of threatened heart failure in an asystolic woman, she may be delivered in a high reclining attitude, as this position helps to relieve some of the pressure on the diaphragm.

Heart lesions may render the continuance of pregnancy so serious as to raise the question of the advisability of emptying the uterus. I believe there should be no hesitation in doing this in any case of decompensated valvular lesion where the continuance of pregnancy greatly endangers the patient's life.

HEART DISEASE IN PREGNANCY AND LABOR.*

BY JAMES LINCOLN HUNTINGTON, M.D., BOSTON.

STUDY the causes of maternal death in the statistics of any lying-in hospital,—placenta previa puerperal fever, eclampsia,—then consult the literature, and the references to these complications are legion; whole chapters concerning each one appear in every work on obstetrics, and the medical journals teem with such articles. Turn back again to the mortality statistics and another quite as deadly obstetrical complication will greet the eye,—heart disease, especially mitral stenosis. Again turn to the text-books and the medical journals. Instead of chapters we find an occasional paragraph and the medical journals practically omit any mention of this very important subject. It is true that nearly half as many patients have died from cardiac lesions in the last five years in the departments of the Boston Lying-in Hospital as have died from puerperal fever.

It is very hard to explain this situation, for it is a very real problem that every obstetrician has got to face, and which is often going to tax his skill and judgment to the utmost.

The subject is such a broad one that I am going to limit this paper to a question of the treatment of chronic valvular disease of the heart as complicated by pregnancy and labor.

Let us take a look at the effect of pregnancy on the normal heart. Larcher in 1827 wrote of the hypertrophy of the heart during pregnancy; many of the French authorities have clung to this belief. Gerhardt in 1862 proved quite conclusively that this was not the case, and most of the Germans have followed his teaching in this regard, although we have Dreysel in 1891 writing from Munich so conclusively about the increase in the weight of the heart during pregnancy and the puerperium that Prof. Williams of Johns Hopkins in 1904 seems inclined to accept this teaching as an accepted fact. However, Alfred Stengel and W. B. Stanton in Philadelphia in 1904 published an article on "The Heart and Circulation in Pregnancy and the Puerperium." This was based on a series of exhaustive observations by these trained internists, and would seem to settle the question. Let me quote from their monograph: "The conclusions arrived at by us were that there is not, during pregnancy, any hypertrophy of the left ventricle, nor any special increase in its work." They did find evidence of constant distention of the conus arteriosus and root of the pulmonary artery, also during the later months of pregnancy continuous dilatation of the right ventricle of very moderate degree.

In spite of this we find Tuszkai of Budapest speaking, in 1913, as if hypertrophy of the heart was an accepted fact in pregnancy, and quoting Jorissen as claiming that it occurs in the initial stage of pregnancy. But Newell, in his very careful and exhaustive paper of about the same date, accepts the statements of Stengel and Stanton as proven, and we are more than willing to agree with him after reading the mass of evidence.

What are the lesions of the heart we are deal-

* Read at a meeting of the Boston Surgical Fortnightly Club.

ing with and how do they compare? Also, how are they affected by pregnancy and by labor, and, most important of all, how can we treat these conditions to offer the most favorable outcome?

All authors agree that mitral stenosis is the most serious of all the single heart lesions that may complicate pregnancy, and that when further complicated by mitral regurgitation the prognosis becomes necessarily more grave, the mortality for these lesions being given as high as 50%. Simple aortic disease has a mortality of 25%, while mitral regurgitation with no history of a break in compensation has really no serious effect on the prognosis of an otherwise normal case, but should be borne in mind as pointing towards the necessity of making this labor as easy as may be.

Of course each case must be considered on its merits and, above all, in considering the prognosis and treatment, we should carefully study the way the heart has responded to the strains it has been subjected to in the past, also the amount of strain it has suffered.

Dr. Newell sums up the case most adequately: "Therefore, in giving advice to the individual patient, the factors present in her case must be carefully considered, irrespective of what the general statistics show. If a patient, although she has a definite valvular lesion, has never had a failure in compensation; if she is at an age at which her powers of recuperation can be counted on to restore a possible break in compensation; and if she understands the importance of taking care of herself during pregnancy, and can be under careful observation, such a patient may fairly elect to run the risks of pregnancy, if the satisfaction of having children outweighs in her mind the possibility of death, the inevitable shortening of her life and a possible invalidism following the pregnancy; but it is not fair to advise her to have children unless she fully understands the risks involved."

In considering the treatment of these cases it will readily be admitted that anything which can aid us in anticipating a break in compensation will be of the very greatest help in guiding us in our treatment, and so I am minded to quote from Tuszkai, who reports a most valuable sign, if substantiated by the test of time. He bases his hypothesis on a very limited number of cases. In these he has found that the normal variation of the pulse rate between the patient lying flat in bed and standing erect, *disappears* early in pregnancy, and in fact may be regarded as an early presumptive sign of pregnancy. When, however, a patient has a heart lesion and the compensation begins to fail, one of the earliest signs will be a return to the normal postural variation met with in the nongravid. At least it would be interesting to try out this sign and see what it is worth.

Supposing a patient with a history of one or two serious breaks in compensation comes to us for advice, in the early months of pregnancy. What should our advice be? It would seem to me that the patient should be plainly told of the risk she is running and be given the alternative of having the pregnancy interrupted or taking a fighting chance. Should the patient have no history of breaks in compensation, should she appear in good physical condition, and if her heart presents a double lesion, she should be told that she is running a definite risk, but should also be told that her chances are at least as good as even. However, should the patient have all these favorable signs and evidently be anxious for a child, and present a single lesion,—even if mitral stenosis,—I should be inclined to be optimistic and dwell on the encouraging side of the picture, taking the precaution, however, to point out to her husband that there was a perfectly definite risk involved. My reason for this course would be that, as optimism is such an asset in any pregnancy, it would be unwise not to allow the patient that added chance for a successful outcome. On the other hand, when the patient is considering whether or not it is wise to become pregnant or particularly when a mother of one or more children asks for advice in this regard, whether or not she gives a history of breaks in compensation, the risk should be clearly pointed out to the patient herself in the manner Dr. Newell so emphatically outlines.

The conduct of the case during pregnancy until the last two months are reached will be little more than the rigid enforcement of the hygiene of pregnancy with emphasis on moderation in everything and insistence on close supervision on the part of the physician,—blood pressure and urinalysis every two weeks, with examination of the heart and counting the pulse.

About the end of the 32d week a careful examination should be made with a view to the way and manner in which the patient is to be delivered. This means a careful antepartum examination and a consultation with an internist (preferably one who has had experience in how cardiac cases stand pregnancy and labor), with a view to just how much the heart will stand. This is usually followed by rest in bed under the care of the internist and a course of digitalis to see how the heart responds to that form of stimulation. Now, of course, should the pelvis show a degree of contraction in regard to that particular fetal head which would raise the question as to whether or not that child could be deliverd in the normal way, of course pubiotomy or Caesarean section should be considered very seriously as possibilities. However, if the heart had never shown any serious break in compensation, and if it responded well to rest in bed and digitalis, and the disproportion between fetal head and pelvis was slight or lacking, I feel very strongly that the patient should be watched along to see if the head will settle into the pelvis. If that takes place I believe that

the patient should be allowed to fall in labor. When labor starts, if the membranes rupture early, a Voorhees bag should be introduced to hasten dilatation; (this may be done when the membranes are intact if dilatation does not progress rapidly). As soon as full dilatation is reached everything should be in readiness for immediate delivery, and certainly, if the case is that of a primipara, and unless the head immediately crowns in a multipara, the patient should be etherized and the baby extracted with forceps. The patient should be watched very carefully during the post-partum period because these patients are very prone to hemorrhage and because collapse is liable to take place at this time.

However, should the patient have a history of one or more breaks in compensation or should she fail to respond to the digitalis and the rest in bed, what then shall be our treatment of patients where no disproportion exists (or is likely to exist at the end of the 40th week), between the fetal head and the pelvic canal? Remember we are viewing the case eight weeks before the probable onset of labor. We know that the coming weeks are going to be hard on the heart and that the chances are that the patient will be progressively less and less fit to start in labor. That is the real problem!

Our object is to remove the child in the way to safeguard best his interests, without exposing the mother to any more risk than is possible. What courses are open to us? (1) Normal labor. (2) Normal labor until the completion of the first stage, with or without the aid of Voorhees bags, followed by forceps delivery under ether. (3) Abdominal Caesarean section at a time when the chances for the mother and the baby reach a common level (generally speaking, as the days elapse, the chances for the child will increase and the chances for the mother will decrease). (4) Vaginal Caesarean section.

Before discussing the merits and shortcomings of these four avenues of escape, let us see just what pregnancy—especially the last two months—does to the heart.

The heart is pushed upwards and forwards by the increased arching of the cupola of the diaphragm, according to Gerhardt; as a result of this the heart is crowded against the anterior wall of the thorax and the edge of the left lung is displaced. Stengel and Stanton, as we have already stated, refer to the dilatation of the right side of the heart. Newell gives as the symptoms of the strain of pregnancy on the normal heart: limitations of the field of cardiac response when sudden burden is thrown on the heart; dilatation of the right side of the heart occurring during or shortly after labor; a tendency to edema of the lungs in the latter part of pregnancy or during labor; a tendency to overfilling of veins of the legs during pregnancy, resulting frequently in marked varicosities; and fifth, the occurrence of marked pulsations in the veins of the neck.

This is the effect upon the heart of the later months of pregnancy. How will these symptoms be influenced by the various methods of conducting labor that we have suggested? First, normal labor should never be allowed in a patient who has had symptoms from a chronic endocarditis. The only exception would be a multipara who has such a short second stage that, in spite of adequate preparation, the head crowns before forceps can be applied.

Second, normal or induced labor allowed to go on only as far as full dilatation of the os with everything in readiness for immediate delivery. I believe this to be the treatment for multiparae who have stood pregnancy well. For primiparae, on the other hand, the risk of the prolonged first stage, with its inevitable strain on the heart, as shown by the rising pulse so common with a normal heart, I feel that only where the patient is very young and strong, the cervix soft and the lesion not extensive, should this method be chosen.

Third, abdominal Caesarean section. F. S. Newell, in the *J. A. M. A.*, September, 1912, writes, "If the soft parts are rigid so that it seems probable that the stage of dilatation will be prolonged and exhausting, the substitution of abdominal Caesarean section for the other methods of delivery has very definite advantages and should certainly be considered in the case of a primipara." Again, before the Massachusets Medical Society in the same year, he says: "Patients with valvular heart disease, particularly mitral stenosis, not infrequently will be more safely delivered by Caesarean section than if allowed to go in labor. This is particularly true of primiparae, whose soft parts are rigid, since the strain of labor on the seriously diseased heart is apt to be followed by a severe and perhaps fatal collapse, and in a patient in whom labor promises to be fairly difficult this risk should not be run, since Caesarean section offers a much safer method of delivery."

Certainly the shortness of the operation, the moderate amount of shock, and the entire absence of fatigue or expulsive strain, would seem to make this operation the ideal one for patients with cardiac disease complicating pregnancy,—added to this is the fact that by Caesarean section the baby is given the very best possible chance. There is another advantage, and that is, with the abdomen opened, the process of sterilization of the tubes, which might often be advisable in the graver cases, could be easily done, with practically no added risk. Why, then, should any other method be considered? Because for the reason that, of all laparotomies, Caesarean section seems most apt to be followed by serious and long continued post-operative distention. Why this is true cannot easily be explained, but all who have had experience with this operation will admit it as a fact. Recently,

to be sure, when all attempts at elaborate pre-operative purging of the intestinal tract have been omitted, there seems a tendency for cases to show less evidence of this complication, so distressing to the normal patient and so alarming to the patient with a cardiac lesion. We have removed the baby to relieve the pressure on the diaphragm, which was endangering our patient's life by pushing the heart so out of place that it could not do its work properly; and by the method we have chosen to accomplish this object we have exposed the patient to an even greater intra-abdominal pressure, which may for many hours more seriously interfere with the proper action of the heart. Of course, where the pelvis is contracted or the walls of the uterus weakened by disease, this will have to be the operation of choice. Otherwise, I feel that it should be employed in cases of cardiac disease only after careful thought has shown that in the individual case, in spite of the risk involved, it offers the best solution of the problem.

Fourth, vaginal Caesarean section. This operation offers certain great advantages over any other method of delivery of a case complicated by a serious cardiac lesion. Of course it must be taken for granted that the pelvis is normal, at least that there is no disproportion between the pelvis and the foetal head. The operation is practically without shock; it is not long; there is no more likelihood of post-operative distention than after a normal delivery; there is no strain on the heart. But, like every other suggested solution, it has its limitations. In the first place, it is difficult, if not impossible, to perform this operation with full-term babies unless they are distinctly smaller than the average. In some cases where the vagina is very small and the cervix is high and points backward, in spite of introducing a bag to pull on and cut against, the operation is so difficult as to be almost, if not quite, impossible. But in the favorable case where, because of the relaxation of the vagina and the uterine ligaments, a good exposure can be obtained, it certainly offers the safest means of emptying the uterus four to eight weeks before term, when the condition of the heart is such that the patient should not tempt fortune by prolonging the strain inevitable during the last weeks of pregnancy.

In speaking of the therapeutic measures to be employed in the treatment of heart disease complicating pregnancy and labor, mention should be made of the value of bleeding in those cases where the heart is overloaded and on the verge of collapse, particularly, immediately after the birth of the child.

CONCLUSIONS.

1. There is no royal road, no accepted path of safety, in dealing with chronic endocarditis as a complication of pregnancy and labor. It is a subject that requires a great deal of study and is worthy of wider discussion.

2. Where the cardiac condition requires that the uterus must be emptied several weeks before term, vaginal hysterotomy, when not rendered impossible by the anatomical limitations, offers distinct advantages over abdominal Caesarean section, particularly because in the former operation there is no post-operative distention.

Medical Progress.

RECENT PROGRESS IN NEUROLOGY.

BY JOHN JENKS THOMAS, M.D., BOSTON.

(*Concluded from page 207.*)

SPASTIC PARALYSES.

Gumbel (Zur Behandlung der spastischen Läh mungen mit Foerster'schen Operation, *Berlin. klin. Woch.*, 1914, li, 1353) reporting on the effects of Foerster's operation of resection of the ventral spinal nerve roots for lessening of spasticity in cases of cerebral paralyses, collects 107 cases of Little's disease from the literature, which have been operated upon. Of these, 14 died, a mortality of 13+ per cent. The writer prefers to do this operation at one stage. He has had eight cases of his own. In his report he omits five of these as not suitable for consideration for one reason or another; one died and one had intercurrent hip joint disease; and of the other three, he states that none learned to walk though careful after treatment was carried out. He concludes that in these cases the muscles are weaker than they appear to be, so that lessening the muscular spasm does not help so much as expected. He also considers that the spine is weakened by laminectomy, as in one of his cases a tendency to curvature was much aggravated, and in two others, previously straight, curvature developed. He concludes that contra-indications for this operation are: first, idiocy; second, athetosis; third, epilepsy; fourth, dislocation of the hip; fifth, marked spasm of the arms; and that even in the remaining cases, better results may be obtained by other methods.

Sharpe and Farrell (A New Operative Treatment of Selected Cases of Cerebral Spastic Paralysis, *Jour Am. Med. Asso.*, 1915, lxiv, 482) on the other hand, have recently proposed another method of treating the cerebral type of spastic paralysis in children. They report having treated 65 cases by sub-temporal decompression, their first operation being in June, 1913. It should be noted especially that they state that this operation is not to be done in cases where the children are mentally deficient, show constitutional inferiority or idiocy, nor on microcephalic cases, or those in which the spastic paralysis seems to be due to lack of development or malformation of the brain or pyramidal tracts. The writers chose for this operation only cases in which there is a history of a difficult birth, and

those in which ophthalmoscopic examination of the eye showed some definite signs of increased intracranial pressure, such as dilated retinal veins, blurring or haziness of the optic discs. They performed a large right subtemporal decompression. If the pressure is very high and persists, they repeat this on the other side the following week, taking care always to make the opening two to three inches in diameter. One often finds at operation fibrous or cystic formation, which may be removed, punctured or let alone, according to circumstances. The after-treatment has been by the usual methods, orthopedic measures, massage, muscle training. The writers state that 40% of spastic cases show evidence of increased intracranial pressure, which seems exceedingly high. From their cases there were six deaths; four showed only slight improvement; all the others showed greater or less improvement. Further studies of these cases are being carried out.

TIC.

Frof. Emmerich (Ueber erfolgreiche Behandlung der Tic Convulsif durch Chlorkalzium, *Münch. med. Woch.*, 1914, lxi, 2269) gives a review of the literature on the treatment of nervous disorders by the use of salts of calcium. Recent investigations seem to show that the normal functioning of nerve cells is controlled by the calcium content of the nucleus, and that the administration of these salts diminishes the excitability of nerves. Emmerich then reports two cases of severe and prolonged tic convulsif, treated with success by the administration of calcium chloride. One case, in a man of 49, had spasm of the muscles of the neck and arm, averaging forty-five a minute. The duration had been ten years, and the patient was becoming exhausted. Except for potatoes, he seldom ate vegetables, his diet which was ample, consisting mostly of eggs, meat and bread. The calcium content of his diet averaged only 0.721 gm. and the magnesia content was 1.113 gm. A teaspoonful three times a day of 100 parts of calcium chloride in 500 parts of water was given, and in four months there was great improvement, and complete cure in eight months. Another case of spasmodic torticollis from spasm of the splenius capitis gave equally satisfactory results, being entirely cured in five months.

Rohmer (*Monatsschr. für Kinderheilkunde*, 1914, xiii, 205), finding that after the withdrawal of the calcium chloride in cases of spasm, the trouble was apt to return, uses a combination of this treatment with the use at the same time of phosphorized cod liver oil, and thinks his results, in eight cases treated in this manner, confirm this view, based on experimental work of Bisk and Schabad, who showed that phosphorized cod liver oil has a specific calcium-retaining effect. Rohmer thinks his method gives better results than any other treatment. Generally the spasms stop on the first or second day, and do not return when the calcium is stopped, and the result seems to be a permanent recovery and not purely symptomatic relief. The electric excitability also falls to normal.

TETANY.

Rosenfeld (Zur Aetiologie der Tetanie, *Arch. für Verdauungskrankheiten*, 1914, xx, 617) reports a case of tetany where the symptoms were apparently due to concentration of the blood. The patient had a cicatricial stenosis of the pylorus and had lost fluids excessively from constant vomiting. When more fluid was allowed to run into the rectum the tetany subsided. The next day it was intended to give 1.5 liters of 0.6 per cent. salt solution intravenously, and 50 gm. of sugar dissolved in water by rectum. By some mistake the sugar was given intravenously in the salt solution and the tetany came on again while this was in progress, but again yielded to more copious intake of fluid, the tetany each time yielding when the deficiency in fluid was made up.

CEREBRAL TUMOR.

Kato (Die Grundlagen der Allgemeinsymptome von Hirntumoren, *Arbeit. a. d. Neurolog., Instit. d. Wiener Univ.*, 1914, xxi, 257) reports a careful study of thirteen cases of brain tumor. He concludes that the clinical phenomena which are considered as general symptoms are in part at least only local symptoms, but produced by the general edema. In relation to this edema, various parts of the brain, especially the various nuclei, possess varying degrees of resistance. Headache he considers due to edema of the meninges, and perhaps also from the hydrocephalus. Vertigo is at least in part explained by marked affection of the region of Deiter's nucleus, and the vestibular nucleus. Vomiting, he thinks, is due to the remarkable sensitiveness of the dorsal vagus nucleus to injury from the tumor. The slowing of the pulse and disturbances of respiration he ascribes to the same cause. The choked disc is due to edema of the optic nerve. For the psychical disturbances he finds no explanation, as alterations of the cells of the cortex are found both when these are present and when they are absent, if we leave aside from psychical disturbances the mental irritability and slight somnolence which are seen in almost all tumor cases.

Alexander and Unger (Heilung eines bemerkenswerten Grosshirn Tumors, *Berl. klin. Woch.*, 1914, li, 1408) report the successful removal of a large encapsulated tumor from the upper part of the posterior central convolution, which was evidently of exceedingly slow growth, with no recurrence in the six months to date of the paper. The only remaining symptom was an astereognosis of the left hand. The tumor was an endothelioma. The remarkable part of the case is that the tumor was removed at one sitting, under local anesthesia. The patient was conscious through the whole operation, even during a whole minute when respiration stopped, and suffered no

pain. The tumor showed well by the roentgen rays.

Mann (Ueber ein neues Symptom bei Kleinhirnabszess, *Münch. med. Woch.*, 1914, xl, 877) noticed in a child who was deeply somnolent from a cerebellar abscess, that when the nose was pinched, the arm of the unaffected side only was used to push the hand away, and it did not use the arm on the side of the abscess at all, though it was not in the least paralyzed. An other case of cerebellar abscess which was convalescent showed a similar phenomenon, and more noteworthy still, a case of frontal abscess used both hands to defend himself.

SPINAL CORD OPERATIONS.

Taylor and Stephenson (Spinal Decompression in Meningomyelitis, *Jour. Nerv. and Mental Diseases*, 1915, xlii, 1) believe that selected cases of meningomyelitis, in which the segment affected can be determined, should be treated by surgical measures. This consists in laminectomy, free opening of the dura, and probably incision into the posterior columns of the cord. They think the dangers from the operation are small, and that convalescence is hastened and better results are obtained. The operation probably acts by promoting freer circulation, and more rapid absorption of inflammatory exudate, and incision of the cord promotes drainage.

Mauss (Ein Beitung zur chirurg. Behandlung der Ruckenmarksgeschwulste, *Münch. med. Wochenschr.*, 1914, lxi, 1451) reports the successful removal of a subdural psammoma which compressed the cord between the eleventh and twelfth thoracic vertebrae. It was chiefly remarkable because of complete cure, after a duration of two years and a half, during a year and a half of which the patient had been paralyzed.

Nonne (Weitere Erfahrungen zum Kapitel der Diagnose von komprimierenden Rückenmarkstumoren, *Deut. Zeitschr. f. Nervenheilk.*, 1913, xlvii, 436) discussed the differential diagnosis of compression of the spinal cord. The older diagnostic methods often left us in doubt, especially as to whether the growth was intra- or extramedullary. Pain is often absent and also variable in the course of the disease. So dissociation of sensory changes and the absence or presence of localized tenderness to pressure of the spinal column, and the unilateral character of the symptoms often fail us. Oppenheim, Flatau, Burns, and others have increased the difficulty by showing that the same symptoms formerly thought to be diagnostic of tumor are seen also in myelitis, multiple sclerosis and circumscript adhesive arachnitis. Pain is often absent when the tumor lies dorsally and atrophy of muscles when it is ventral. The spinal fluid seemed to give us a new sign, almost a "compression syndrome", by the increase of globulin with slight or no lymphocytosis, either with or without a yellowish color, to which attention has been called chiefly by French writers, as Froin in 1903. In the past six or seven years, many cases have been reported in which this xanthochromic reaction was absent, and only the increase of albuminoid substances was found, as by Henkel, Nonne, Siemerling, Raven, and others. Nonne concludes that the increase of albumen in the spinal fluid in cases of tumor is probably due to stasis distal to the point of compression and not to inflammation. The following diagnostic points he considers justified:

Isolated increase of albumen in the fluid strengthens the suspicion of compression of the cord.

It is present only distal to the point.

Xanthochromatism of the fluid is due to mixture with blood coloring matter, probably in consequence of hemorrhage.

Increase of cells is probably due to an inflammatory reaction in the meninges.

This syndrome gives no inference as to the character or starting point of the compressing cause.

Finally, a large number of cases show that when everything points to compression, yet laminectomy gives a negative result, still improvement may follow the operation.

Nonne adduces nine extra-medullary and four intra-medullary cases of Elsberg, five cases of Kononova, and adds two of his own.

He states finally that the spinal fluid results do not differentiate intra- and extra-medullary growths.

FAMILY PERIODIC PARALYSIS.

Diller and Rosenbloom (*Arch. of Int. Med.*, 1914, Dec., 769) present a valuable paper giving the clinical history and a metabolism study extending over seven days in a case of periodic paralysis of the familial type. The nitrogen metabolism and urinary nitrogen partition (total nitrogen, urea nitrogen, ammonia nitrogen, uric acid nitrogen, creatinin nitrogen, and undetermined nitrogen), the sulphur metabolism and urinary sulphur partition (total sulphates, inorganic sulphates, ethereal sulphate and neutral sulphur) the calcium, magnesium, phosphorus, and fat metabolism were all studied. The only definite change in the metabolism found was a marked decrease in the amount of creatinin and creatinin nitrogen excreted in the urine, and a marked increase in the amount of undetermined nitrogen in the urine.

THOMSON'S DISEASE.

Johnson and Marshall (*Quart. Jour. of Med.*, London, 1915, viii, 97) report a family in which four members were affected with this disease, three of which they were able to study carefully. Portions of the muscles excised in one case showed the fibres larger than normal, which was due to the increase of fibrillae in each fibre. The nuclei were in proportion to the size of the fibre, showing no relative increase. The striations of the muscles showed normal characteristics. In another case there was no definite change in the

contractions when taken in the morning as compared to those obtained in the evening. Prolonged fixation of a limb increased the abnormal condition in the muscles; after repetition of a movement, though it became quicker, it was also twice as slow as that in a normal person. Reinforcement quickened the first movement of a series, but at the expense of the subsequent ones. Changes in temperature produced no definite changes. On electrical stimulation through the skin weak currents produced brisk contractions and strong ones prolonged spasm. On stimulating the median nerve directly with weak faradism, when the patient was anesthetized, with momentary stimulus contractions lasting fifteen seconds were produced, while the duration was only eight seconds when a strong stimulus was used. After two injections of strychnine the muscular movements were practically normal, and Johnson and Marshall suggest the use of strychnia in this disease.

DYSTONIA MUSCULARUM.

Climenko (Dystonia Musculorum Deformans, *Med. Record*, 1914, lxxxvi, 998) reports a clinical case of this puzzling disease. It affected a Jewish girl of 11 whose birth and early childhood were normal, the disease developing after an attack of whooping cough, at the age of 9½, with weakness first in one leg and then the other, and soon tremors affecting both legs and the left hand. The condition progressed and a year later she was unable to walk. The tremor had persisted and affected all the extremities, resembling an athetosis somewhat, but somewhat irregular and worm-like, and entirely lacking in rhythm. There was kyphoscoliosis and on attempting to walk there was torsion of the trunk on the pelvis, flexion of thighs on the trunk, and the knees and feet held at unusual angles with numerous disharmonious movements of the extremities and trunk. The leg muscles and hamstrings were markedly hypertonic and the quadriceps atonic. Similar conditions were present in the hands and arms. The knee jerks and ankle jerks were diminished, and Babinski and Oppenheim's were absent, while the abdominal reflexes were intact. Sensation was not affected nor were the cranial nerves. The intelligence was good.

NERVE SUTURE.

Beckman (Surgical Treatment of Facial Paralysis, *Mich. State Med. Soc. Jour.*, 1914 xiii, 681) from the Mayo clinic reports three cases of anastomosis of the facial nerve in which the point of anastomosis was surrounded with a fresh section of a vein. In these three cases the restoration of function has been more perfect than in one case where the anastomosis was surrounded by fascia and muscle. An inch or more of the facial, external or anterior jugular vein is taken and slipped over the spinal accessory nerve before the anastomosis is made, and afterwards slipped along until it covers the point of suture. In all four cases the main trunk of the spinal accessory was used with an end to end anastomosis.

Capen (Neue Methode der Transplantation bei Nervendefekten, *Deut. med. Woch.*, 1914, xl, 1894) reports a case where a gap of 12 cm. was left in the ulnar nerve, after removal of a neurofibroma. In order to bridge the gap, the median cutaneous nerve was divided on a level with the peripheral stump of the ulnar. The central stump of the cutaneous was then joined by a perineural suture to the peripheral portion of the ulnar nerve, and following this the central end of the ulnar was sutured to the trunk of the cutaneous nerve. In five weeks the interossei muscles were active, and in six months the hand could be used practically normally, and sensation had returned to the ulnar side of the hand.

VERTIGO.

Two recent papers by Wilson and Pike (*Vertigo. Jour. Am. Med. Asso.*, 1915, lxiv, 561; and Mechanism of Labyrinthine Nystagmus, and Its Modification by Lesions in the Cerebellum and Cerebrum, *Arch. of Int. Med.*, 1915, xv, 31) contain the results of recent interesting work upon the cerebral causes of vertigo. They define vertigo as a disturbance of equilibrium, which is the result of disturbances of sensations arising from (1) the ear; (2) the eye; (3) the muscles, tendons and joints; and (4) the skin, which result in disturbances of muscle co-ordination. And yet in tabes we see disturbances of equilibrium without vertigo, so vertigo arises from confusion or dissociation of impulses upon which the subject bases his conception of position in space, and for this the most important are the sense organs in the head segment. Ataxia is due to the loss of a group of afferent impulses; vertigo to disturbance of the normal association of certain groups of afferent impulses, especially those from the head segment. This association is subconscious, yet consciousness may enter in either as a controlling or disturbing element, for example, through memory and emotions. Such a disturbing influence may cause disharmony, and so there arises psychic vertigo. The third and fourth groups of causes do not often cause vertigo; in most instances coming from the ear, with those from the eye next. We also frequently find central vertigo from lesions involving the central paths, as the vestibular path, or the great mechanism of the cerebellum for co-ordinating unconscious sensations from the muscles. The writers were especially impressed in this experimental work with the importance of pressure on the eighth nerve, or in the posterior fossa, but the cause may be in the cortex, in a hyperexcitability of the nervous system. So we get (a) direct vertigo, from lesions of the vestibular apparatus, and (b) indirect, as from gastro-intestinal disturbances.

The authors came to the following conclusions:

1. In labyrinthine disease the patient falls to the side of the lesion, generally in the direction of the slow phase of the nystagmus.
2. The sense of rotation of self is towards the quick phase of the nystagmus.
3. The sense of apparent movement or rotation may persist after, or without nystagmus.
4. Turning the eyes to the side of the slow phase of the nystagmus lessens the vertigo, as the quick phase only can be inhibited, and inhibition of this inhibits the rotary sensation of self and of external objects and diminishes vertigo.
5. In labyrinthine disease the patient lies on the sound side.

Reports of Societies.

BERKSHIRE DISTRICT MEDICAL SOCIETY.

THE Berkshire District Medical Society held a meeting on June 24, 1915, at which the program consisted of a symposium on the heart. The following papers were read:

"The Anatomy and Physiology," Dr. Bruce W. Paddock, Dr. W. L. Tracy and Dr. F. H. Howard.

"The Abnormalities in Infectious Diseases," Dr. C. S. Chapin.*

"The Abnormalities in Pregnancy," Dr. E. H. Taylor.†

"The Abnormalities in Nephritis," Dr. Henry Colt.

Book Reviews.

Yellow Fever Bureau Bulletin. Supplement Volumes I and II. Liverpool: University Press. 1915.

These two volumes represent the reports received from time to time from investigators working in West Africa under the yellow fever commission appointed by the British secretary of state for the colonies, "to study the nature and relative frequency of the fevers occurring among Europeans, natives and others in West Africa, especially with regard to yellow fever and its minor manifestations." These reports on questions connected with the non-malarial fevers of West Africa are issued under the auspices of the incorporated Liverpool school of tropical medicine.

The reports in the first volume deal with the outbreaks of yellow fever in Nigeria in 1913, in Lagos in 1913 and 1914, and at Guayaquil, Equador in 1913. These reports, largely clinical in character, are abundantly illustrated with seven plates, nine plans and maps and 128 charts.

The reports in the second volume deal with a series of 1100 medical pyrexias at Sierra Leone in 1913, with the work carried on at Freetown in the same year and with various experiments and observations on yellow fever, especially concerning the transmission of the disease to laboratory animals. The reports in this volume are illustrated with twelve plates, one map and 107 charts.

The material in these two volumes constitutes a valuable scientific contribution to the further study of a disease whose etiology is still unknown, although its prophylaxis and clinical control are effectively understood.

Index of Prognosis. By Various Writers. Edited by A. RENDLE SHORT, M.D., D.S., B.Sc., Lond.; F.R.C.S., Eng.; Captain R.A.M.C. New York: William Wood and Company. 1915.

This book, which is issued as a companion volume to the Index of Treatment and Index of Differential Diagnosis published by the same firm, aims to coördinate the prognoses of various methods of treatment by a study of their end results and to furnish data on prognosis apart from treatment. Primarily the work has been based on investigation of over a thousand cases from the Bristol Royal Infirmary, where the editor is honorary assistant surgeon and lecturer on physiology. The various subjects are presented by a series of twenty-four contributors, including the editor and other British physicians, surgeons and specialists of distinction. The topics are alphabetically presented, from abdominal injuries to yellow fever, and each item is signed by the author's name. The book is unique and constitutes a contribution of distinct interest and value to medical literature.

A Text-Book of Histology. By RUDOLF KRAUSE. New York: Rebman Company. 1915.

This volume by the professor extraordinary of anatomy at the University of Berlin is translated from the original manuscript and printed only in the English language. It appears as the second part of the author's larger course in normal histology, of which the first part deals solely with the technic of microscopy. The references to illustrations given in the text relate to the colored illustrations contained and published in this larger work. The present volume, which is intended primarily for the use of physicians not particularly interested in technic, is illustrated wth a series of thirty-six text figures, three of which are colored. The work forms a valuable, compact exposition of the data of histology with a convenient descriptive emphasis by means of italic and black-faced type. The material is well arranged, and the anonymous translator has done his work satisfactorily. The book should be useful to students as well as to practicing physicians.

* See JOURNAL, page 230. † See JOURNAL, page 235.

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REGISTRATION OF NURSES IN MASSACHUSETTS.

IN the issues of the JOURNAL for March 5 and 12, 1914, and for February 4, 1915, we published editorials commenting on bills then pending before the Massachusetts Legislature to amend the requirements for nursing in this Commonwealth. There are now pending, before the present session of the Massachusetts General Court, two bills (House Nos. 44 and 1089), presenting alternative propositions relative to the registration of nurses in this State. A comparison of these bills and a discussion of their relative merits seem appropriate.

The first of these bills (No. 44) was presented by Dr. Walter P. Bowers as secretary of the State Board of Registration of Nurses, and embodies the legislation recommended by this board in its sixth annual report covering the year ended December 31, 1915. These recommendations, therefore, should first be considered. They are in part as follows:—

"The board unanimously recommends legislation which is amendatory to the existing law. This legislation provides that there shall be two classes of nurses, one, graduates of training schools for nurses able to pass examinations of the board and designated as 'Registered Nurses,' and another class who may be registered without examination upon the endorsement of one physician registered under Massachusetts laws, and two other citizens known to be responsible and of good moral character. Nurses registered under this second provision of this proposed act would be designated as 'Registered Attendants,' and would have the right to practice nursing in this Commonwealth, but could not hold themselves out as graduate nurses.

"This second provision is devoid of technical requirements and should be no hardship on any person desiring to do this work. We trust that it will meet the support of the citizens of the State.

"This carries with it the power of the Board of Registration of Nurses to revoke a certificate and cancel the registration of any nurse for cause. There could be no valid objection to this, because the restrictive provisions of the act would be operative only in cases where gross incompetence or immorality shall have been demonstrated.

The text of the bill submitted by the committee and embodying the recommendations of the board is in part as follows:—

"Section 1. Section three of chapter four hundred and forty-nine of the acts of the year nineteen hundred and ten is hereby amended by striking out all of said section, and inserting in place thereof the following:—*Section 3.* Applications for registration shall be made upon blanks furnished by the board, and shall be signed and sworn to by the applicants. Applicants for registration as graduate nurses who shall furnish the board with satisfactory proof that they are twenty-one years of age or over, of good moral character, and that they have received a certificate of graduation from a training school for nurses shall, upon the payment of a fee of five dollars, be examined, and if found qualified, shall be registered and authorized to use the title Registered Nurse, and shall receive a certificate thereof from the board, signed by its chairman and secretary.

"Applicants for limited registration under this act, who cannot qualify as graduates of training schools for nurses, and who shall furnish the board with satisfactory proof that they are twenty-one years of age or over, and of good moral character, and who are endorsed by three citizens of this Commonwealth known to be re-

sponsible persons of good moral character, one of whom shall be a physician registered in this Commonwealth, shall, upon payment of a fee of three dollars, be registered with the right to use the title Registered Attendant, and shall receive a certificate in testimony thereof from said board, signed by its chairman and secretary.

"Nothing in this act shall be construed as preventing a nurse registered under the title Registered Attendant from filing a new application with the required fee of five dollars, for the purpose of securing the title Registered Nurse, if he or she shall have received a diploma from a training school for nurses as heretofore provided in this section.

"After August first in the year nineteen hundred and sixteen no person shall engage in the work of nursing for hire in this Commonwealth unless he or she has become registered in accordance with the provisions of this act.

"An applicant who fails to pass an examination satisfactory to the board, and is therefore refused registration, shall be entitled within one year after such refusal, to a re-examination at a meeting of the board called for the examination of applicants, without the payment of an additional fee.

"The said board may, after a hearing, by vote of a majority of its members, annul the registration and cancel the certificate of a nurse of either class; and without a hearing may annul and cancel the certificate of a nurse of either class who has been found guilty of a crime or misdemeanor."

Section 2. (This section provides for the salary and compensations to be received by the chairman, secretary and members of the board.)

"Section 3. Section eleven of chapter four hundred and forty-nine of the acts of the year nineteen hundred and ten is hereby amended by striking out all of the text after the word 'gratuitous,' in the first line, and in place thereof inserting the following words:—'or emergency nursing of the sick,'—so that the section as amended shall read as follows:—*Section 11.* This act shall not apply to gratuitous or emergency nursing of the sick."

This bill may be regarded as representing the expert judgment of the physicians entrusted by the State with the registration of its nurses. Its measures appear not only adequate but reasonable, and it would seem that, under present conditions, at least, it should provide satisfactorily not only for the protection of the community but for the welfare of the nursing profession.

The second of the bills (No. 1089) is presented by the Massachusetts State Nurses' Association as an alternative to the above measure. The bill provides for the amendment of Section 3 of Chapter 449 of the Acts of 1910, which contains the present law relative to nurses' registration, by striking out the whole of said section and inserting in its place the following:

"Section 3. Application for registration shall be made upon blanks furnished by the board, and shall be signed and sworn to by the applicant. Applicants for registration, under this section, who shall furnish the board with satisfactory proof that they are twenty-one years of age or over, of good moral character, and that they have received a certificate of graduation from a training school for nurses, giving at least two years' training in a hospital and considered efficient by the board, shall, upon payment of a fee of $5.00, be examined, and if found qualified, shall be registered and authorized to use the title 'Registered Nurse,' and shall receive a certificate thereof from the board signed by its chairman and secretary.

"An applicant who fails to pass an examination satisfactory to the board, and is therefore refused registration, shall be entitled, within one year after such refusal, to a re-examination at a meeting of the board, called for the examination of applicants, without the payment of an additional fee. The said board may, after a hearing, by vote of a majority of its members, annul the registration and cancel the certificate of any nurse; and, without a hearing, may annul the registration and cancel the certificate of a nurse who has been found guilty of a crime or misdemeanor.

"The board shall have authority under this section to investigate at any time the training schools for nurses in this Commonwealth for the purpose of determining their fitness and efficiency, as shown by their general equipment, by the character, the methods, and the extent of instruction given therein.

"For the purpose of conducting this investigation, the board may employ a person legally entitled to R. N. This selection shall be made from names presented by the Massachusetts State Nurses' Association.

"All expenses for such investigation shall be paid by the Commonwealth from the amount received for the registration of nurses. All fees received by the board for the registration of nurses shall be paid once a month into the treasury of the Commonwealth.

"After January one, in the year nineteen hundred and twenty, no person shall practice as a graduate nurse unless registered by the provision of this act."

As it stands, there seem to be several objectionable features in this second bill. In the first place it appears to lay upon the Board of Registration an undue responsibility for visiting and determining the efficiency of training schools for nurses, and places in their hands an undue power of control over such schools. In the second place it provides that for the conduct of this investigation the board may employ a registered nurse, but only a nurse selected from a list of

names submitted by the Massachusetts State Nurses' Association. This virtually gives to the Association the selection of an investigating nurse. There are in Massachusetts today approximately 6,000 registered nurses, and it seems hardly fair to place in the hands of a body of only about 700 members the power to dictate the selection of a representative from so large a number. In the third place, this bill in its concluding paragraph provides that after a certain date no person shall practice as a graduate nurse unless also a registered nurse. This definition of the term "graduate nurse" is uncertain, nor is it clear that the prohibition of all practice except by registered nurses is at present judicious or will become so by the date named.

All things considered, it would appear that the first of these two bills, which is not open to the objections advanced against the second, is preferable and should be enacted into law, since it will supply the changes in the present statute relative to the registration of nurses which are agreed by the advocates of both bills to be desirable. The hearing by the legislative committee on Bill No. 44 has already been held, but action on it has been deferred until after the hearing on Bill 1089, which will probably occur some time during the current week. Physicians are reminded that these bills affect their interest and the welfare and progress of medical practice as much as they do those of the nursing profession. They are urged, therefore, carefully to scrutinize these proposed measures and, after reaching a decision, to attend the hearing, if possible, and at least, by correspondence with their representatives and senators, to indicate their opinion and preference.

MEDICAL SOCIAL WORK AT THE BOSTON CITY HOSPITAL.

IN another column of this issue of the JOURNAL we publish a statement by Miss Farmer of the medico-social work done by her department during the first year of its establishment at the Boston City Hospital. The importance of this branch of hospital activity has been abundantly demonstrated since its original establishment at the Massachusetts General Hospital ten years ago. Nine years ago the same work was inaugurated at the Bellevue Hospital in New York, and has since been adopted by other institutions. Miss Farmer was connected from the outset with the Social Service Department at the Massachusetts General Hospital, and when it was desired to establish a similar service at the Boston City Hospital, her expert services were secured as director.

The establishment of the medical social work at the Boston City Hospital was undertaken by a private committee of charitable ladies, who assumed the financial responsibility for it for a limited time, under the leadership of Mrs. Paul Thorndike. The first meeting of this committee was held on March 14, 1914, and in October the department was opened under the direction of Miss Farmer. In November, 1914, another worker was secured and a number more have subsequently been added. Even so, the number employed can deal with but a small proportion of the patients needing some form of medical social service.

As is well shown by Miss Farmer's report, the success of the department was immediate and unquestioned. If such an expansion of its activities took place in its first twelve months, under all the difficulties and discouragements which attend the establishment of any undertaking in its experimental stages, it is obvious how much more may be accomplished in succeeding years with adequate funds and well organized plans.

The value of medical social work, is not only to the patients, in the advice and actual assistance which they receive, but also to the medical and surgical staff in the help afforded by following up patients beyond the hospital limits, and thereby greatly increasing the likelihood of permanent benefit from treatment and of the prevention of further sickness. The professional staff of the City Hospital has, of course, recognized the scientific, as well as the humanitarian, values of social service and should be among the foremost to desire the possibility of its continuance in the Boston City Hospital. The time is rapidly drawing near when the pecuniary support of this work can no longer be left entirely to private enterprise. Its importance for the best efficiency of the hospital and for the welfare of patients is so clearly recognized by the profession and by the public that the hospital staff may confidently be expected to recommend, and the trustees to make provision for, its future maintenance and extension.

CARDIAC DISEASE IN PREGNANCY.

THE attention of readers is called to the report, which appears in this issue of the JOURNAL, of a meeting of the Berkshire District Medical Society, at which the papers presented constituted a symposium on the heart. Two of these papers, on abnormalities of the heart in infectious diseases and in pregnancy, are also published in this issue. It is our plan in the future to present as frequently as possible similar brief reports of meetings of the various district societies and, so far as practicable, to publish the papers presented.

In conjunction with the paper by Dr. Taylor on "Abnormalities of the Heart in Pregnancy," we are publishing also a paper by Dr. Huntington on "Heart Disease in Pregnancy and Labor," as appropriately belonging with this symposium. The subject of cardiac disease in pregnancy, as both authors point out, is one of great importance and one which has not received in the past the attention which it deserves. Opinions differ widely, according to the temperament and experience of the physician, as to the desirable methods of dealing with the various forms of cardiac disease during pregnancy and labor. We desire to call particular attention to the presentation of some of these opinions by Dr. Taylor and Dr. Huntington, and to express the hope that their articles may stimulate further discussion of the subject in these columns.

MEDICAL NOTES.

NATIONAL COMMITTEE FOR MENTAL HYGIENE.—At the eighth annual meeting of the National Committee for Mental Hygiene, held recently in New York, Mr. Otto T. Bannard, the treasurer, announced that the Rockefeller Foundation had donated to the national committee $22,800 for carrying on its surveys of the care of the insane in sixteen states during the year. Surveys of South Carolina and Texas have been completed, and in California, Tennessee, Missouri, Illinois, North Dakota, Indiana and the District of Columbia surveys are now under way or about to be undertaken. The following officers were elected for the ensuing year:

President, Dr. Lewellys F. Barker; vice-presidents, Dr. Charles W. Eliot and Dr. William H. Welch; treasurer, Otto T. Bannard; medical director, Dr. Thomas W. Salmon; secretary, Clifford W. Beers; executive committee, Dr. August Hoch (chairman), Dr. George Blumer, Professor Stephen P. Duggan, Dr. William Mahon, Dr. William L. Russell and Dr. Lewellys F. Barker; finance committee, Professor Russell H. Chittenden (chairman), Otto T. Bannard, Dr. Henry B. Favill and William J. Hoggson; committee on mental deficiency, Dr. Walter E. Fernald (chairman), Dr. L. Peirce Clark, Professor E. R. Johnstone, Dr. C. S. Little and Dr. A. C. Rogers.

A MEDICAL CONGRESS.—There was held in Chicago, on February 7 and 8, a joint meeting of representatives of the Federation of State Medical Boards of the United States, the Association of American Medical Colleges and the councils on medical education and on health and public instruction of the American Medical Association. The first meeting of the congress was the twelfth annual conference of the council on medical education. The program consisted of a symposium on the relation of the laboratory courses to the work of the clinical years, with addresses by Dr. Lewellys F. Barker of Johns Hopkins University, Dr. James Ewing of Cornell University Medical College, New York City, and Dr. Frederic S. Lee of Columbia University College of Physicians and Surgeons.

Later in the day the council held a joint session with the State boards, and heard Surgeon Generals W. C. Gorgas of the army, W. C. Braisted of the navy, and Rupert Blue of the public health service discuss the National Board of Medical Examiners in its relationship to the federal medical services. In addition, Dr. Herbert Harlan, president of the Maryland State Board of Medical Examiners, presented ideas as to the relationship of the national board with the various state bodies. These talks were followed by technical papers by Dr. Victor V. Vaughan, dean of the University of Michigan Medical School, and Dr. Isadore Dyer, dean of the Tulane University School of Medicine, at New Orleans. Dr. Charles V. Chapin, Commissioner of Health of Providence, R. I., submitted a report of his investigations of health departments of various cities. Under his perfect system of rating, a perfect score of 1000 points was distributed among the following heads, which were in turn subdivided: Supervision of local health officers; communicable disease, tuberculosis, diagnostic laboratory, vital statistics, child hygiene, education, food, general sanitation, and control of water and sewage.

On this basis Massachusetts had a score of 745; New York, 730; Pennsylvania, 716; Minnesota, 570; New Jersey, 555; Indiana, 526; Maryland, 507; Kansas, 499; Vermont, 486; Ohio, 462; Illinois, 346.

MEDICAL PREPAREDNESS.—The remarks of Dr. W. C. Gorgas, surgeon-general of the United States Army, before the medical congress held in Chicago, February 7 and 8, are worthy of emphasis. He stated that the United States would, in a few years, have an army of one million men ready to take the field, and to meet the requirements of this vast body of men at least 10,000 surgeons will be required.

Dr. Gorgas urged the adoption of a proposal offered earlier in the day for a national conference of medical examiners, composed of representatives of state medical examining boards, which would prepare examination questions for State boards throughout the country. Candidates who passed this examination would be eligible for the United States Medical Reserve Corps and would not have to pass any other examination for licenses to practise. Should the plan be adopted, Dr. Gorgas said, it would place the United States in a condition of preparedness, from a medical standpoint, unexcelled by any nation; each surgeon would be instructed in field duties, camp sanitation, and the proper foods to be given out in various climates.

SICKNESS INSURANCE.—In connection with the present contemplated legislation in this state to establish a system of health insurance for industrial workers, it is interesting to note the plan of federal sickness insurance advocated by Dr. Otto W. Huffman at the recent medical congress held in Chicago. Dr. Huffman stated that his plan contemplated a tax of $2.00 a year on all wage earners whose income is less than $1200, of which he estimates there are 33,000,000 in the United States. Each would have the privilege of selecting his own doctor, but no physician would be allowed to carry more than 2,000 names. Dr. Huffman further stated in part:

"This would mean $4,000 a year for treating those that become sick or disabled and statistics show that not more than sixty of these would ever be sick at the same time.

"In general, the public does not realize how miserably underpaid the medical profession is. There are 127,000 active practitioners in the country and their incomes aggregate $63,500,000, an average of only $500 a year. Nor is it true, as has often been stated, that 'there are too many doctors.' About two and one-half per cent. of the population is constantly sick and disabled, an average of 19 patients a day for each doctor. This does not take into account much of the practice of specialists. Furthermore, insurance company statistics show that 69 per cent. of the insured have some impairment of health.

"Under compulsory insurance, we should be paid to keep our clientèle in sound health, and it would be against our interest to have sickness occur. When the medical profession is paid to prevent sickness and is a loser when anyone becomes sick, the day of the quack and the charlatan will be past."

TUBERCULOSIS IN JAPAN.—Report from Tokyo on December 30, states that Dr. Shibasaburo Kitasato has recently published important and striking statistics of the distribution of tuberculosis in Japan. The death rate from this disease in the entire country is 17 per 10,000, but this rate is considerably exceeded in certain occupations. Among school teachers in particular, the annual death rate from tuberculosis is 24 per thousand. Another class in which the incidence of the disease is particularly high is that of factory girls, of whom there are 500,000 in Japan. Among this class there is an average of 9000 deaths a year of which 6300 are from tuberculosis.

"Most of the factory girls live in dormitories. Space is at a premium in these dormitories, usually six feet square for three girls. In many instances two girls are required to sleep in one bed. Then, again, the girls are usually divided into two shifts. The girls of the night shift sleep in the day time and work at night. The girls of the day shift return and enter the very beds just vacated. No opportunity to air the bedding is given."

Further factors in the prevalence of tuberculosis in Japan are the construction of houses in low areas where the sun rarely enters, and the primitive habit of tightly closing windows and doors during the night.

INCREASE IN COST OF DRUGS.—Since the beginning of the New Year the increase in cost of many drugs owing to disturbance of the market by the European War has in the main continued, though certain commodities have shown a slight downward tendency. Report from New York on January 26 refers particularly to the rise in cost of opium and antipyrene.

"After a period of comparative inactivity, opium furnished the surprise of yesterday's trading, the quotation on gum opium going from $11, at which point it had been maintained since before January 1, to $12.50, and on powdered opium from $12.25 to $12.50. This is a high record for nearly fifty years for this product. The market position of this product is further strengthened by the probability that with Greece's entrance into the war on either side, supplies from Turkey will be completely cut off. Already there has been noted an increasing difficulty in obtaining opium from this source. Previous to the war, opium sold here at $7.45, so that the advance during hostilities has amounted to approximately 90 per cent. Trade factors predict a further rise in price, as the supply in hand diminishes.

"Among the drugs, antipyrene has recently been the leader in the upward price movement. A little more than a year ago this product could be purchased at $2.50 a pound, whereas $50 is now asked. This represents a $20 increase over the ruling quotation on January 1 of this year.

Antipyrene is not produced in this country, and the United States is chiefly dependent upon Germany for its supply. Some shipments have been received by American importers through arrangement with the British and German governments, but this practice has recently been checked. Antipyrene is used principaly in medicinal compounds, particularly in combination with aspirin, and the demand due to the epidemic of grip has exhausted stocks here. While the local supply is very small, importers explain the high prices as the result of speculation. Sales at $75 are anticipated in the trade.

"Among the drugs and chemicals the prices of which have fallen recently are glycerine, carbolic acid and menthol."

INAUGURATION OF FORCHHEIMER CHAIR OF MEDICINE.—The formal inauguration of the Frederick Forchheimer professorship of medicine at the University of Cincinnati and the installation of Dr. Roger Sylvester Morris as first professor were held in Cincinnati, Ohio, on January 28, under the presidency of the Honorable Bellamy Storer. Addresses were delivered by Mr. Storer, by Mr. C. W. Dabney, president of the University and by Dr. Christian R. Holmes, dean of the Medical College. President Dabney recounted and eulogized the work of Dr. Forchheimer. Dr. Morris delivered his inaugural address on "Precision in Medicine," saying in part of the recent advances in medicine and surgery:

"It is safe to say that there is not a family in an enlightened community at the present day which does not owe a very real and personal debt of gratitude to Louis Pasteur. All the advance we have recorded in preventive medicine, in vaccine or immune therapy, is traceable to his illuminating researches.

"Could the honest anti-vivisectionist, accustomed as he is to the benefits of preventive medicine and of specific therapy (resulting possibly in the saving of his baby's life through diphtheria antitoxin), could such a one, I say, be made to live a year of his life under conditions which existed fifty years ago, the community, perhaps, devastated by a mysterious pestilence, or himself, perchance, the victim of perforative appendicitis, for which nothing could be done, he would have fresh food for thought and would acquire, possibly, a new and truer understanding of the word 'humanity,' not only in its application to dumb animals but even to man."

PREVALENCE OF MENINGITIS, POLIOMYELITIS, SMALL-POX AND TYPHOID FEVER.—The weekly report of the United States Public Health Service for January 28 states that during the month of December, 1915, there were, in Ohio, 17 cases of cerebrospinal meningitis, 16 of poliomyelitis, 229 of small-pox, and 354 of typhoid fever. During the same period there were 81 cases of small-pox and 96 of typhoid in Michigan; and in Minnesota, 197 cases of small-pox and 77 of typhoid. There were 246 cases of small-pox in Wisconsin and 202 of typhoid fever in Louisiana.

NEW CHILDREN'S CLINIC RECORD CARD.—One of the most promising developments of the Tuberculosis Clinic service throughout New York City has been the establishment of special children's classes. These classes are designed to care not only for the children patients of the Clinic but also the children of the Clinic's adult patients—those who are known to have been exposed to infection. In these classes, which are held on Saturday morning, every effort is made to carry out preventive measures and to secure for all the children proper disposition either in preventoria, sanatoria, or open-air school rooms. An important feature of the Children's Clinic work has been the courses in physical exercise inaugurated at the Chelsea Clinic by the Society for Prevention and Relief of Tuberculosis, and subsequently introduced into other clinics through the coöperation of the Department of Education. The classes have been so well attended and have been so beneficial in improving or maintaining the good health of the children and holding their interest in the Clinic that it is hoped it may be possible to extend these classes to other clinics. During the coming year, it is proposed to carry on, simultaneously with these classes, a control class for the purpose of comparison. It is confidently expected that not only will great benefit accrue to the children, but that interesting statistical data will presently be available.

DEFINITION OF DIABETIC FOODS.—The United States Department of Agriculture has recently issued, for the guidance of officials of the Department in enforcing the Food and Drugs Act, a decision (No. 160) fixing a definite limit to the amount of starch and sugar that may be present in certain gluten products and diabetic foods, and also fixing the amount of nitrogen that must be present in certain of these products, and making requirements as to moisture and other constituents. The decision covers ground gluten, gluten flour, self-rising gluten flour, and "diabetic" foods. The definitions and standards as stated in the Food Inspection Decision were recommended by the Joint Committee on Definitions and Standards, consisting of representatives of the United States Department of Agriculture, the Association of American Dairy, Food and Drug Officials, and the Association of Official Agricultural Chemists. These two associations have already adopted the definitions and standards.

Investigations by the officials in charge of the enforcement of the Food and Drugs Act have shown that various food products have been placed on the market from time to time that are recommended by the manufacturers for use by

people suffering from diabetes. It is generally held that the foods best suited to persons suffering from diabetes are those which contain little or no starch and sugar. Some of the foods placed on the market and recommended by the manufacturers for use in diabetes have been found to contain nearly as much starch and sugar as ordinary products, so that they were of no more value in the treatment of diabetes than ordinary food products that could be purchased more cheaply. The diabetic patient can avoid ordinary food products that contain considerable quantities of starch and sugar, as the composition of these products is generally known. In the case of prepared foods, advertised for use in diabetes, however, the patient may be misled into eating quantities of starch and sugar that might be positively injurious.

EUROPEAN WAR NOTES.

CHOLERA IN AUSTRIA-HUNGARY.—The weekly report of the United States Public Health Service for February 4, 1916, states that during the three weeks ended November 29, 1915, there were in Austria 115 cases with 43 deaths of Asiatic cholera; in Croatia-Slavonia, 72 cases with 22 deaths; and in Hungary, 9 cases with 8 deaths.

A HOSPITAL UNIT FROM NOVA SCOTIA.—Report from Antigonish, Nova Scotia, on February 9, states that the University of St. Francis Xavier in that city, has offered to send to Europe for service in a British military field hospital, a unit, to consist of twelve surgeons, forty nurses, and 150 assistants. This offer has been accepted by the military department at Ottawa and authorized by the Imperial Council in England. It is expected that the unit will sail for Europe in April.

WAR RELIEF FUNDS.—On February 12 the totals of the principal New England relief funds for the European War reached the following amounts:—

Jewish Fund	$113,657.49
Belgian Fund	95,956.71
Serbian Fund	78,122.98
Allied Fund	60,689.80
French Wounded Fund	45,940.33
British Fund	46,724.70
American Ambulance Fund	74,161.58
Armenian Fund	33,418.60
French Orphanage Fund	25,758.25
Surgiacl Dressings Fund	19,019.00
Polish Fund	20,258.56
La Fayette Fund	18,261.99
German Babies' Milk Fund	1,166.80

BOSTON AND NEW ENGLAND.

THE WEEK'S DEATH RATE IN BOSTON.—During the week ending February 12, there were 266 deaths reported, with a rate of 18.24 per 1,000 population as compared with 253 and a rate of 17.63 for the corresponding week of last year. There were 4 deaths from influenza. Deaths from pneumonia and broncho-pneumonia numbered 48 against 24 last year.

There were 46 deaths under 1 year as compared with 39 last year, and 73 deaths over 60 years of age against 85 last year.

During the week the number of cases of principal reportable diseases were: Diphtheria, 50; scarlet fever, 64; measules, 102; typhoid fever, 3; whooping cough, 53, and tuberculosis, 70.

Included in the above were the following cases of non-residents: Diphtheria 3; scarlet fever, 7, and tuberculosis, 11.

Total deaths from these diseases were: Diphtheira, 5; scarlet fever, 1; measles, 3; whooping cough, 2, and tuberculosis, 30. Included in these were the following non-residents: Diphtheria, 1 and tuberculosis, 1.

RÉSUMÉ OF COMMUNICABLE DISEASES IN MASSACHUSETTS FOR JANUARY, 1916.—There was a large increase in the total number of cases of communicable diseases reported in the month of January, 1916. During the month of January, 1915, there were 6,156 cases reported to this department, while during the month just closed, there were 7,626 cases reported. In comparison with the month of December, 1915, there was an increase of 2,224 reported cases of communicable diseases. This great increase of communicable diseases has been due to the greater prevalence of measles, scarlet fever, whooping cough, diphtheria and tuberculosis.

The striking feature of the January mortality returns is the number of deaths from diphtheria, measles, scarlet fever and whooping cough.

Diphtheria continues to take its enormous toll of lives. The fact that there were 84 deaths during the month just closed should call our attention to a renewed effort to overcome this disease. The fatality rate has been 8.0. This is not an unusually high rate for this disease.

Measles and whooping cough have caused 49 deaths during the month. The public and even a great many physicians still persist in classifying these two diseases as "harmless." When you consider that over three per cent. of the whooping cough cases and almost one per cent. of the measles cases were fatal last month, it does not seem to require any further comment. The subject of the control of these two diseases is a very live public health problem. All public health workers should coöperate in working out some rational method to control these diseases.

Scarlet fever did not cause as many deaths during January as it did the same month last year, but it did cause almost four times as many deaths last month as it did during the month of December, 1915. This does not give us any index to the amount of damage done to the 1,160 persons who suffered from this disease during January, for very often the after effects of scarlet fever are much more serious than the disease itself.

Typhoid fever continues to show a very high fatality. While there was a decrease in the number of cases last month, 18 deaths were reported. This makes a fatality rate of 16.1, which is a very high rate.

The increase in the number of cases of the various diseases noted above is interesting. Measles, scarlet fever, whooping cough, diphtheria and typhoid fever have been present in unusual amounts in various cities and towns. Tuberculosis reports are beginning to show distinctly the effect of dispensaries. During January, 1916, there was an increase in reported cases over the same month last year of 230.

Measles has been epidemic in various parts of the state. In Chelsea, Dennis, Lynn, Saugus and Winthrop it has been particularly prevalent, while Canton, Wrentham, Lawrence, Webster are having an unusual number of cases.

Scarlet fever has been present in unusual amounts in the following cities and towns: Cambridge, Dedham, Hingham, Milton, Quincy, Lynn, Arlington, Medford, Methuen, Worcester, Leominster, Northampton and Springfield.

Whooping cough is present in almost every part of the state. Some of the cities and towns where it is most prevalent are as follows: Mansfield, Cambridge, Melrose, Winthrop, Andover.

Diphtheria has been more prevalent in some places during January than it was in December. Many of the reported cases are not in persons ill with the disease, but are "carriers" detected during the course of routine examination. Diphtheria remains an important factor in the morbidity reports from the following cities and towns: Lawrence, Lowell, Somerville (on account of its fatality), Leominster and Springfield.

Typhoid fever was not reported in unusual amounts from any particular part of the state. The interesting thing about this disease during the month was the fact that it had an unusually high fatality. One hundred and twelve cases were scattered through various parts of the state and caused 18 deaths.

Measles and whooping cough have been epidemic in a number of places. The State District Health officers have investigated a number of these outbreaks, and in almost every case it has been shown that the disease was spread through the medium of the public school. Material is being collected for a study of these two diseases, with a hope that we may be able to suggest a rational plan of controlling them.

During the month there have been two cases of trichinosis reported, one from Worcester and one from Brockton. A single case of actinomycosis was reported from Lowell. This city also had the distinction of reporting the single case of smallpox in the state. The case was imported from Canada.

RHODE ISLAND HOSPITAL.—The fifty-second annual report of the Rhode Island Hospital gives the following statistics: Patients admitted during the year, 7,647. These, with the 374 patients remaining in the hospital October 1, 1914, make a total of 8,021 patients treated during the year. The average stay in the hospital of each patient treated during the year was 15.92. As indicative of development of methods of treatment it is interesting to note the average stay of patients in this hospital at intervals of ten years: For the year 1875 the average stay was 43.00 days; 1885, 41.00 days; 1895, 25.34 days, and 1905, 21.11 days. Nearly 7,000 radiographs were taken in the X-ray Department during the past year. The Crawford Allen Memorial Hospital which has shown good results in the treatment of children during the summer months, will be kept in operation during the winter by reason of a gift of Mr. Stephen O. Metcalf of $6,000.

APPOINTMENT OF DR. SCANNELL.—At a recent meeting of the Boston School Committee, Dr. David D. Scannell of this city was elected its president for the ensuing year.

BROOKLINE TUBERCULOSIS HOSPITAL.—On February 5 the new Brookline Tuberculosis Hospital was first formally opened for inspection and a reception was held by the hospital staff to the state trustees of hospitals, for consumptives and to other invited guests. An address was made by the chairman of the Brookline selectmen.

"The hospital has been erected at an approximate cost of $38,000, from plans which include also a central heating and lighting plant for the hospital, the contagious building and the almshouse.

"In exterior finish, the hospital is of limestone, with two stories in the centre, and two one-story wings. The second floor is a hall for nurses, who will have also outdoor sleeping quarters. The first floor contains two wards of eight beds each, four private rooms, dining room, recreation room, kitchen and office. The inclusive exterior dimensions are 35 by 120 feet. Covered and uncovered porches surround the building, and direct sunlight may be had through the south wall, much of which is of glass. Skylights also are arranged so that the sun's rays may shine directly upon the patients' beds.

"Fresh air, which is driven through the building, is first sent through a heating chamber. There is a silent-call system, by which a patient, by the push of a button, shows a light over his bed and in the hall and office. The general lighting system is indirect and on two circuits—one for lighting a ward only partly, and the other for throwing on a full light."

Massachusetts Medical Society.

STATED MEETING OF THE COUNCIL.

A STATED meeting of the Council of the Massachusetts Medical Society was held in John Ware Hall, Boston Medical Library, Wednesday, February 2, 1916, at 12 o'clock noon. The president, Dr. Charles F. Withington, was in the chair and the following 72 councilors present:

BERKSHIRE.
J. H. Riley.

BRISTOL NORTH.
Sumner Coolidge.

BRISTOL SOUTH.
W. A. Dolan.
R. W. Jackson.
H. G. Wilbur.

ESSEX NORTH.
R. V. Baketel.
T. R. Healy.
G. E. Kurth.
E. H. Noyes.
F. W. Snow.

ESSEX SOUTH.
G. M. Kline.
C. H. Bangs.
R. E. Bicknell.
N. P. Breed.

FRANKLIN.
G. P. Twitchell.

HAMPDEN.
J. M. Birnie.
M. B. Hodskins.

MIDDLESEX EAST.
C. J. Allen.
W. H. Keleher.

MIDDLESEX NORTH.
C. E. Simpson.

MIDDLESEX SOUTH.
Albert August.
M. H. Bailey.
H. T. Baldwin.
F. E. Bateman.
C. H. Cook.
H. F. Curtis.
A. A. Jackson.
S. F. McKeen.
C. E. Mongan.
Godfrey Ryder.
E. H. Stevens.
Julia Tolman.
C. T. Warner.

NORFOLK.
M. V. Pierce.
E. H. Brigham.
A. N. Broughton.
G. W. Kaan.
Bradford Kent.
Joseph Kittredge.
W. H. Robinson.
E. P. Starbird.

NORFOLK SOUTH.
C. S. Adams.

PLYMOUTH.
A. E. Paine.
F. G. Wheatley.

SUFFOLK.
J. D. Barney.
E. S. Boland.
H. I. Bowditch.
G. W. W. Brewster.
E. M. Buckingham.
W. L. Burrage.
H. A. Christian.
A. L. Chute.
E. A. Codman.
J. A. Cogan.
E. G. Cutler.
Albert Ehrenfried.
C. M. Green.
J. B. Hawes, 2d.
W. C. Howe.
J. L. Morse.
Abner Post.
Anna G. Richardson.
R. M. Smith.
H. F. Vickery.
C. F. Withington.

WORCESTER.
F. H. Baker.
W. P. Bowers.
David Harrower.
G. O. Ward.
C. D. Wheeler.
S. B. Woodward.

WORCESTER NORTH.
E. A. Sawyer.

The reading of the minutes of the last meeting was dispensed with as they had been printed in full in the JOURNAL and had been sent to every Fellow.

The reports of the committees appointed to consider the petitions of J. J. Sullivan, of Lawrence, and O. M. Deems, of Springfield, for restoration to the privileges of fellowship were read and accepted, and it was voted that they be restored on the usual conditions. Three petitions for restoration were read, and the following committees were appointed to consider them:

E. H. Ferguson: G. W. Winchester, L. S. McQuade, T. E. Guild.
Joseph Shehan: W. C. Howe, Percy Brown, R. B. Osgood.
G. W. Ellison: A. F. Peck, Alexander McNeish, J. C. Austin.

The president nominated and the Council elected these delegates and alternates to the House of Delegates of the American Medical Association for a term of two years from June 1, 1916:

Delegate,	J. B. Blake.	Alternate,	Gilman Osgood.
"	H. G. Stetson.	"	L. A. Jones.
"	L. F. Woodward.	"	J. F. Burnham.

In the same manner, W. P. Bowers, of Clinton, was appointed a delegate to the Annual Congress on Medical Education, Public Health and Medical Licensure, at the Congress Hotel, Chicago, February 7 and 8, 1916, also these delegates to the annual meetings of state medical societies:

VERMONT: I. J. Clarke, Haverhill; A. D. Bush, Burlington, Vt.

CONNECTICUT: A. J. Abbe, Fall River; S. A. Lord, Cromwell, Conn.

NEW HAMPSHIRE: P. P. Johnson, Beverly; H. K. Faulkner, Keene, N. H.

MAINE: C. H. Bangs, Lynn; S. W. Allen, York Harbor, Maine.

RHODE ISLAND: Godfrey Ryder, Malden, W. L. Munro, Providence, R. I.

NEW JERSEY: To the one hundred and fiftieth anniversary of the founding of the Society, July 23, 1766: L. M. Palmer, Framingham; R. H. Ferguson, East Orange, N. J.

The treasurer read his report for the year 1915, and the secretary read the following report of the Auditing Committee:

"BOSTON, January 28, 1916.

"The undersigned, a duly appointed committee, having examined the books of the Treasurer, find them correctly cast and properly vouched, and also that he has in his possession the securities called for.

"EDWARD O. OTIS,
"WILLIAM H. ROBEY, JR."

Voted, To accept the reports and place them on file.

Dr. J. D. Barney reported for the Committee of Arrangements, stating that the committee have prepared plans for holding the annual meeting in the Copley-Plaza Hotel, Boston, as last year, sketching the details and asking for suggestions from the council. There were no suggestions and no discussion.

Dr. Green presented this report on membership and it was accepted and its recommendations adopted by vote:

The Committee on Membership and Finance makes the following recommendations as to membership:

1. That the following named Fellows be allowed to retire, under the provisions of Chapter I, Section 5, of the by-laws:

Carleton, Charles Greenleaf, of Lawrence.
Fisher, Chester Irving, of New York.

3. That the following named Fellows be allowed to resign, under the provision of Chapter I, Section 7, of the by-laws:

Bianco, Joseph Anthony, of East Boston.
Cain, William George, of Nashua, New Hampshire.
Clark, James Colby Dorr, of Medford.
Johnson, Herbert Shattuck, of Malden.
Kelley, Michael, of Fall River.
Langnecker, Harry Leslie, of San Francisco, Cal., to take effect March 1, 1916.
Laws, Sophie Goudge, of Spartanburg, South Carolina.
Nagle, Evelyn Wyman, of Boston.
Parker, Albert Munro, of Santa Maria, California.
Quennell, Willard Leslie, of Lynn.
Smith, Theobald, of the Rockefeller Institute, Princeton, N. J.
Vosburgh, Stephen Earle, of Augusta, Maine.
Williams, Harry Edwin, of Mount Vernon, Maine.

4. That the following named Fellows be allowed to change their district membership, without change of legal residence, under the provisions of Chapter III, Section 3, of the by-laws:

Boutwell, Horace Keith, from Norfolk to Suffolk.
Bowditch, Henry Ingersoll, from Norfolk to Suffolk.
Chamberlain, Myron Levi, from Essex South to Suffolk.
Hartwell, John Bryant, from Norfolk to Suffolk.
Marshall, Herman Weston, from Norfolk to Suffolk.
Pratt, Joseph Hersey, from Norfolk to Suffolk.
Richardson, Frank Linden, from Norfolk to Suffolk.
Robbins, Chandler, from Middlesex South to Suffolk.
Walker, Clifford Black, from Suffolk to Norfolk.
Walker, Irving James, from Middlesex South to Suffolk.
Wernick, Benzion G, from Norfolk to Suffolk.

For the Committee on Membership and Finance,
CHARLES M. GREEN, *Chairman.*

Dr. Green presented the accompanying report on finance for the Committee on Membership and Finance, and it was accepted and its recommendations adopted:

The Committee on Membership and Finance makes the following recommendations as to Finance:

1. That a dividend of $4000, from the balance remaining in the treasury on December 31, 1915, be apportioned among and paid to the district societies, in accordance with the provisions of Chapter VII, Section 3, of the by-laws:

2. That appropriations for Standing Committees for the financial year 1916 be made as follows:

For the Committee of Arrangements	$2900
For the Committee on Ethics and Discipline	25
For the Committee on Medical Education and Medical Diplomas	50
For the Committee on State and National Legislation	250

3. That to make possible the continuance of the affiliation of this Society with the BOSTON MEDICAL AND SURGICAL JOURNAL, the Council appropriate for the year 1916 the sum of $9500, this sum to be reduced by such amount as may be raised by special subscription.

4. That the Advisory Committee representing the Massachusetts Medical Society on the Board of Management of the BOSTON MEDICAL AND SURGICAL JOURNAL be authorized by the Council to secure pledges towards the maintenance of the JOURNAL.

For the Committee on Membership and Finance,
CHARLES M. GREEN, *Chairman.*

Dr. C. H. Cook read the following proposed amendment to Chapter IV, Section 1, of the by-laws, and action on it was postponed until the annual meeting of the Council, in June:

Chapter IV, Section 1.

In the second line after the word, "president" insert the word, "ex-presidents", and in the third line omit the word "and", and after the word "treasurer", insert the words, "and librarian", so that the section shall read as follows:

Section 1. The Council shall consists of councilors chosen by the district societies, and the president, ex-presidents, vice-president, vice-presidents *ex officiis*, secretary, treasurer and librarian of the general society, and the chairman of each standing committee.

At the request of the president the secretary read a letter from Dr. Joseph C. Bloodgood, secretary of the American First Aid Conference, on the importance of the subject of First Aid, and on nomination by the president the following committee was appointed to represent the Massachusetts Medical Society as a First Aid Committee:

F. B. Lund, J. B. Blake, R. P. Strong.

Dr. Abner Post read the following resolutions on the death of Dr. James Clarke White, on behalf of a committee appointed by the president:

Resolved, That the Council of The Massachusetts Medical Society hereby express its sense of loss in the death of Doctor James Clarke White,—a loss which affects not only the community in which he lived but the whole profession.

Doctor White was graduated from Harvard College in 1853 and from the Medical School three years later. He then spent two years abroad, largely devoted to the study of skin diseases, in Vienna under Professor Hebra, and returned to Boston to take up his life work. During his youth and college days, he had been greatly interested in natural history and scientific study and on his return to Boston he was made Adjunct Professor of Chemistry in the Medical School and a little later Visiting Physician to the Massachusetts General Hospital. These positions he resigned, in 1871, to take charge of a newly-created department of dermatology in the same hospital.

In the same year, he was made Professor of Dermatology in the Harvard Medical School, a chair which he occupied for thirty-one years. It was the first professorship of the kind in Boston and, indeed, the first in any medical school in this country.

He was an active member of the Natural History Society and of the American Academy of Arts and Sciences. He had also an extensive and appreciative knowledge of artistic and literary matters, but his great interest was in his chosen field of dermatology. He was one of the founders of the American Dermatological Association and its first president. He was an attendant at various International Dermatological meetings and held Honorary Membership in many foreign dermatological societies. In 1903, the International Congress of Dermatology was held in New York and Dr. White presided over its deliberations. He was often spoken of as the Father of Dermatology in this country.

In the Massachusetts Medical Society he was long a councilor and librarian. In 1892, he gave the annual oration on "The Relations of the Massachusetts Medical Society to Medical Education." From 1892 to 1894, he was its president.

His erect, well-dressed figure, his careful statements and well-chosen speech were the index of an orderly and logical mind. He was respected and honored by those who knew him and most heartily beloved by those admitted to the circle of his friends.

In speaking of the dead of the year then just past, in his annual oration in 1892, Dr. White said:

"Not a few of us have ceased to labor in the year which closed yesterday,—some when their work had just begun, some in full tide of life, but most in the evening of their days when the last rest had been well earned and could not have been unwelcome."

After an active and fruitful life, Doctor White's rest is well earned, and by these resolutions we express our sincere respect and affection and our deep sense of loss.

ABNER POST,
JOHN T. BOWEN,
WILLIAM L. RICHARDSON.

Dr. G. W. Gay was prevented by illness from preparing resolutions on the death of Dr. David Williams Cheever, and in his absence the president read this tribute:

On December 27, 1915, the Society lost by death, Dr. David Williams Cheever, of Boston, one of its most valued members, its recording secretary in 1866-7, and its president from 1888 to 1890. This noted surgeon and leading member of the medical profession was the son of Charles Augustus Cheever, a prominent surgeon of Portsmouth, and grandson of Abijah Cheever, of Saugus, a naval surgeon of the Revolution. He was born at Portsmouth, November 30, 1831, graduated from Harvard College in the class of 1852 and from the Harvard Medical School in 1858. Appointed demonstrator of anatomy in the School in 1860, he rose to be professor of clinical surgery in 1875, professor of surgery in 1882, and professor emeritus in 1893. From the beginning of the Boston City Hospital in 1864 he served the institution as surgeon for thirty years, becoming surgeon emeritus in 1893. He was known to a long series of medical students and practitioners as a resourceful and bold surgeon; thorough and painstaking in technic and assiduous in after-care As a lecturer his language was concise, clear and to the point. Dr. Cheever became vice-president of the Boston Medical Library in 1890 and in 1896 he was made its president, holding that office while the funds were raised for the present building and also during the first five years' occupancy of this joint permanent home of the Library and the Massachusetts Medical Society, being always faithful in attendance at the meetings of the managing committee, and fair and impartial in his rulings. He will be much missed.

The president read an obituary of Dr. George Howard Malcolm Rowe, for thirty years superintendent of the Boston City Hospital and a Councilor of the Society from 1895 to 1909. (See BOSTON MEDICAL AND SURGICAL JOURNAL, February 10, 1916.)

Adjourned at 1 p.m.

WALTER L. BURRAGE, *Secretary.*

TREASURER'S REPORT, JANUARY 1, 1916.

Mr. President and Fellows of the Society:

Your treasurer has the honor to report the finances of the year 1915 as follows:

RECEIPTS.

Balance from 1914		$14,906.76
Assessments paid to treasurer		1,256.00
Assessments paid to district treasurers:		
Barnstable	$ 135.00	
Berkshire	394.00	
Bristol North	269.00	
Bristol South	653.00	
Essex North	723.00	
Essex South	1,018.00	
Franklin	184.00	
Hampden	941.00	
Hampshire	299.00	
Middlesex East	335.00	
Middlesex North	462.00	
Middlesex South	2,068.00	
Norfolk	2,124.00	
Norfolk South	317.00	
Plymouth	454.00	
Suffolk	3,178.00	
Worcester	1,265.00	
Worcester North	418.00	
		$15,237.00
Assessments paid at Annual Meeting		219.00
Sale of Dinner Tickets		782.00
Subscriptions for BOSTON MEDICAL AND SURGICAL JOURNAL*		12.00
Interest on Massachusetts Bonds		560.00
Interest on deposits, New England Trust Co.		211.32
Interest on deposits, Old Colony Trust Co.		154.60
Interest from Savings Banks for general fund		43.38
Interest from Savings Bank for Cotting fund		121.20
Interest on Annuity Policies of the Mass. Hospital Life Insurance Co.		867.86
Gift of Dr. M. C. Smith		51.40
		$34,422.52

EXPENSES.

President's expense:		
Travelling	$ 9.82	
Postage and printing	7.05	
		$16.87
Secretary's expense:		
Stamped envelopes, and printing	184.30	
Addressing circulars	10.00	
Engrossing diplomas	8.00	
Publishing death notices	1.00	
Stenographers at annual meeting	51.75	
Incidentals	18.72	
		$273.77
Librarian's expense:		
Postage and express	$ 38.26	
Bookbinding	52.80	
		$ 91.06
Treasurer's expense:		
Stamped envelopes, stationery and printing	$202.70	
Clerical work	42.12	
Clerk at Annual Meeting	10.00	
Premium on bond	37.50	
Safety deposit box	10.00	
Binding catalogues for Annual Meeting	9.70	
Incidentals	2.00	
		$314.02
District treasurers' expense		921.20
Bank charges		1.28
Supervisor's expense		29.52
Censor's expense		552.00
Guarantee to BOSTON MEDICAL AND SURGICAL JOURNAL		7,303.24
Defense of malpractice suits		569.65

* By far the larger number of these subscriptions were paid direct to the Committee on the JOURNAL, the Treasurer receiving only those that were less than five dollars.

On account of American Medical Association, travelling expenses		483.50
Rent		750.00
Salaries of officers of the Society		1,700.00
Salaries of editors of JOURNAL		500.00
Returns of overpaid assessments, less commission		29.70
Annual dividend		4,000.00
Shattuck lecture		200.00
Cotting lunch:		
February	$ 65.69	
June	157.95	
October	64.65	
		$288.29
Committee of Arrangements:		
Cigars	$119.75	
The Copley-Plaza	2,552.90	
Police	28.00	
Clerks	25.00	
Card signs	1.50	
Gas and electric appliances	6.00	
Printing	14.50	
Music	100.00	
Incidentals	9.64	
		$2,857.29
Committee on State and National Legislation:		
Legislative Bulletin	$10.00	
Stenographer, typewriting of envelopes	19.33	
		$29.33
Committee on Public Health:		
Travelling, postage and stationery	$39.25	
Typewriting	2.50	
Incidentals	9.50	
		$51.25
Exchange:		
Loss on foreign check		.37
Return of wrongly-paid dinner ticket		3.00
		$20,965.34
Balance January 1, 1916		$13,457.18

This balance is deposited as follows:

Deposit in New England Trust Co.	$5,605.45	
Deposit in Old Colony Trust Co., Bay State Branch	$7,851.73	
		$13,457.18

It is less than the balance of the same period of the previous year by $1,449.58.

PERMANENT INVESTMENTS.

The permanent investments of the Society are as follows, there being no change in these investments during the year:

Shattuck Fund:	
Annuity policy of Massachusetts Hospital Life Insurance Co.	$ 9,166.87
Phillips Fund:	
Massachusetts 3½ per cent. gold bonds	10,000.00
Cotting Fund:	
Deposit, Roxbury Institution for Savings	1,000.00
Deposit, Provident Institution for Savings	1,000.00
Deposit, Suffolk Savings Bank	1,000.00
Permanent Fund:	
Annuity policy of Massachusetts Hospital Life Insurance Co.	11,253.30
Massachusetts 3½ per cent. gold bonds	6,000.00
Deposit, Franklin Savings Bank	1,074.48

EDWARD M. BUCKINGHAM, *Treasurer.*

Obituary.

THOMAS HUBBARD RUSSELL, M.D.

DR. THOMAS HUBBARD RUSSELL, who died of pneumonia on February 2, at New Haven, Connecticut, was born in that city on December 14, 1851. He received the degree of Ph.B. from Yale in 1872 and that of M.D. in 1875. After serving for a year as resident at the New Haven Hospital, he became physician to the New Haven Dispensary. In 1878 he was appointed surgeon to the New Haven Hospital, and upon his retirement in 1908, he became consulting surgeon. He was successively lecturer on surgery, professor of materia medica and therapeutics, and professor of clinical surgery at the Yale Medical School. He was a member of the American Medical Association, the Connecticut State Medical Society, the New Haven County Medical Society, the New Haven Medical Association and the American Association for the Advancement of Science. He is survived by his widow and five children.

Miscellany.

MEDICO-SOCIAL WORK AT THE BOSTON CITY HOSPITAL.

As director of the medico-social department, established over a year ago at the Boston City Hospital, Miss Gertrude L. Farmer has recently presented a report giving, in part as follows, a more detailed account of its work than appears in its monthly statistical statements:

Our second year in the hospital began on October first, 1915. A year ago our equipment consisted of a desk in one of the corridors of the Surgical Out-patient Buildings. I was the only worker. Now we have a comfortable office in the administration building, a room in the Female Medical Out-patient Department, and a desk with a screen adjoining the Gynecological Department in the Out-patient.

During October, 1914, I dealt with 18 patients and paid 36 visits. In October, 1915, the number of patients referred to us had increased to 127, and we made 152 visits. The number of workers has increased to seven; four of these are on part time.

To anyone familiar with the development of similar work in other hospitals, it is clear that our growth has been as rapid as is consistent with careful organization. Two chief factors have contributed to this progress. First, the cordial, sympathetic reception we have met with from the hospital authorities and employees, and, second, the courage, generosity and fine

judgment shown by our Social Service Committee, in their dealings alike with the hospital authorities and with their workers. During the first months we had to spend a great deal of time in learning the ways of the institution, and adapting ourselves to them. Every hospital is an entity in itself, and familiarity with other similar institutions does not relieve one of this necessity.

We have had 586 patients referred to us during the year. By the executive staff, 117; by the medical staff, 325. The remaining 144 were brought to our notice by one of the nurses or supervisiors within the hospital, or by an outside agency. The majority of these patients were sent to us with the request that we should see that they were properly cared for on discharge. In some instances this not only insures a more speedy discharge, but also better care for the patient, because it is one of our chief functions to discover and make use of the numerous charitable and semi-charitable institutions and agencies with which Massachusetts is so richly provided. We have made use of about 150 such organizations this year. The other day a patient was referred to us in order that we might hasten her removal from the ward. She had been three months in the hospital, and no longer needed medical care in the acute hospital. A visit to a relative who lived about ten miles from Boston brought about this patient's discharge in a few days.

We have often been asked to provide follow-up work, whereby patients are induced to return to the Out-patient Department on discharge from the wards, and the out patients are kept coming regularly for treatment until discharged by the physicians. This is a phase of our work which especially appeals to some of the medical staff as it enables them to round up their work. As yet the hospital makes no provision for it. Another frequent request is for oversight and instruction in the home, including nursing care through district nursing and similar associations. Occasionally we are asked to provide some form of material relief. This may include a set of false teeth, a piece of apparatus, or an extra diet in the home. Through a member of our committee we have been given a small emergency fund; before using it we make every effort to obtain what is needed elsewhere.

To provide some form of medico-social work for even 30 per cent. or 40 per cent. of the 60,000 new patients treated anually in this hospital would require a large corps of workers. With our small number of workers, we have had to select certain groups and confine ourselves, more or less carefully, to these. At present we are dealing with the following: A small group of adults from the four medical house services, medical children from the same services, medical children under fourteen in the Out-patient Department, and a group of women from the gynecological service both in House and Out-patient. The fifth worker takes such patients as may be referred to us outside of the above groups, and helps with the office work.

Since October 1, 1915, we have begun to have the services of a secretary, and have started typewritten records. We hope to develop this secretarial part of the work and make it of real assistance to the case workers in their more arduous duties. Personally, I do not plan to deal directly with patients but to devote myself to oversight and organization.

It is plain that the above plan leaves out of consideration by far the greater part of the hospital, including the aural, ophthalmological, nerve, dermatological, genito-urinary and large surgical services for men, women and children, and the South Department. The latter offers a great field for work in the after care of children. Such cases as we have dealt with from these services have demonstrated as great need of medico-social work as in the groups we have selected, and we are constantly obliged to refuse urgent requests for our services from members of the staff.

In order to make this report brief I have omitted most of the details about our work. Should any member of the Board of Trustees or the Medical Staff be interested to learn more fully what we are doing and how we are doing it, I shall be very glad to give further information. Later in the winter we hope to publish our first annual report. This will include our first sixteen months and make our fiscal year accord with that of the hospital.

Correspondence.

THE DEATH OF SIGNOR DON VINCENT.

BOSTON, Jan. 27, 1916.

Mr. Editor: In view of some recent discussion of the responsibility of the physician for the death of the patient, may I call your attention and that of your readers to the following passage from Le Sage's "*History of Gil Blas*," descriptive of the death of Signor Don Vincent. I quote from the English translation in Everyman's Library.

"It happened soon after this adventure that Signor Don Vincent fell sick. Independent of his very advanced age, the symptoms of his disorder appeared in so formidable a shape that a fatal termination was but too probable. From the beginning of his illness he was attended by two of the most eminent physicians in Madrid. One was Doctor Andros, and the other Doctor Oquetos. They considered the case with due solemnity; and both agreed, after a strict investigation, that the humours were in a state of mutiny, but this was the only thing about which they did agree. The proper practice, said Andros, is to purge the humours, though raw, with all possible expedition, while they are in a violent agitation of flux and reflux, for fear of their fixing upon some noble part. Oquetos maintained, on the contrary, that we must wait till the humors were ripened before it would be safe to go upon purgatives. But your method, replied the first speaker, is directly in the teeth of the rules laid down by the prince of medicine. Hippocrates recommends purging in the most burning fever from the very first attack, and says in plain terms that no time is to be lost in purging when the humours are in ὀργασμός that is to say, in a state of fermentation. Ay! there

is your mistake, replied Oquetos. Hippocrates by the word ὀργασμός does not mean the fermentation, he means rather the concoction of the humours.

Thereupon our doctors got heated. One quotes the Greek text, and cites all the authors who have explained it in his sense; the other, trusting to a Latin translation, takes up the controversy in a still more positive tone. Which of the two to believe? Don Vincent was not the man to decide that question. In the meantime, finding himself obliged to choose, he gave his confidence to the party who had dispatched the greatest number of patients—I mean the elder of the two. Andros, the younger, immediately withdrew, not without flinging out a few satirical taunts at his senior on the ὀργασμός. Here then was Oquetos triumphant. As he was a professor of the Sangrado school, he began by bleeding copiously, waiting till the humours were ripened before he went upon purgatives. But death, fearing, no doubt, lest this reserve of purgatives should turn the fortunes of the day, got the start of the concoction, and secured his victory over my master by a *coup-de-main*.

Such was the final close of Signor Don Vincent who had lost his life because his physician did not know Greek."

It would perhaps hardly be fair to cite the above as an argument for the importance of classical studies for physicians, since the worthy Signor died rather from his physician's ignorance of medicine than of Greek. The satire of Le Sage, like that of Molière and other of their contemporaries, is delightful in the quiet irony of its comments upon the medical profession. Surely there is no other department of human learning whose professors and exponents have so risen in popular respect and esteem during the past four centuries. "T. S."

A QUESTION OF LOGICAL FALLACY.

Milton, Mass., Feb. 4, 1916.

Mr. Editor: The discussion of the work of Goldthwait and Bryant by Dr. Hooton, which appeared in the Journal of Jan. 27, 1916, lays itself open to a criticism so fundamental that I believe it should not be overlooked. Whether or not the claims of these authors are valid, Dr. Hooton's method of answering them appears to involve a logical fallacy which can be analyzed without expert knowledge of the particular subject.

As I understand it, Goldthwait and Bryant contend that there is a correlation between divergence of human form from the average in the direction of stoutness and certain anatomical features with related physiological and pathological tendencies on the one hand, and a correlation between divergence in the opposite direction and another group of features and tendencies on the other. Dr. Hooton attempts to refute this by citing general averages of entire populations. Thus the average of all measurements made of Norwegians is compared with the average of all measurements of the Swiss, etc., and the comparison fails to substantiate the above correlations. Of course it does, for the *divergences* from the average, which are the especial theme of the studies of Goldthwait and Bryant, have been specifically submerged in the compilation of the general average.

By the same process of reasoning it would be an easy matter to annihilate Mendel's Law of heredity. For example, it is well known that when "blue" Andalusian fowls are bred together the offspring show divergence; in the long run one quarter are black, one quarter "splashed white" and one half "blue," or intermediate between black and white. Now, if we sought the average plumage of all the offspring, the more perfectly Mendel's Law was exemplified, the more nearly midway between black and splashed white would the average fall. If we compared the averages of two separate poultry yards in which the breed was cultivated, each taken as a whole, we should fail to find in the comparison any correlation in support of Mendel's Law. In short, by misuse of the general average it is possible to obscure Mendel's Law or any other divergences from the mean, which might present significant correlations.

Yours truly,
Alexander Forbes.

A MEMORIAL OF ANGELO CELLI.

The Leader of the Great Italian Campaign Against Malaria.

February 3, 1916.

Mr. Editor: The following notice which has been issued by the Italian Society for the Study of Malaria, has recently been sent to me by Sir William Osler:

"Society for the Study of Malaria.

"The Society for the Study of Malaria, of which Professor Angelo Celli was the founder and the animating and guiding spirit, has decided to start a subscription for the purpose of erecting in his memory a monument which will perpetuate the record of his accomplishments for all time.

"It is believed that such a monument should stand on the Roman Campagna, the field of the studies and the object of the most loving care of Angelo Celli; on the spot where he has redeemed man and earth from the scourge of malaria.

"The Society turns not only to its members, but to the scientists, the physicians, the proprietors and improvers of the soil, to the agriculturists, to the teachers; to all who have admired the profound labors and the innumerable beneficent activities of Angelo Celli.

"Gifts may be sent to the Treasurer of the Society, Prof. Allessio Nazari, via Agostino Depretis, 92, Roma.

"President Leone Caetani Principe Di Teano.

"Councillors: Prof. Amico Bignami, Prof. Antonio Dionisi, Sen. Giustino Fortunato, Sen. Leopoldo Franchetti, Sen. Prof. Ettore Marchiafava.

"Secretary, Prof. M. Levi Della Vida."

It has seemed to Sir Wm. Osler and to me that we in America, who owe so much to the life-long and persistent studies of the great physician who was the leader of the Italian campaign of prophylaxis against malarial fever, should play our part in contributing to this well-deserved memorial. May we not appeal to the physicians of America to join in honoring this great benefactor of the race.

Any contributions which are sent to the undersigned will be forwarded to the Italian Committee. It is hoped that there may be a generous response and any sum, no matter how small, will be gratefully accepted.

Wm. S. Thayer,
406 Cathedral Street,
Baltimore, Md.

THE TOURNIQUET IN TRANSFUSION.

Boston, Feb. 3, 1916.

Mr. Editor: Many men have stated that they have difficulty in the use of rubber tubing as a tourniquet when doing a transfusion, by applying it either too tightly or not tight enough. This can be entirely overcome and the tourniquet question made absolutely accurate by using an ordinary Tycos apparatus placed high on the arm with the tubing extending over the shoulder. This is kept at the donor's *diastolic* pressure while filling the tube, which gives the exact amount of venous congestion desired.

Sincerely yours,
A. R. Kimpton, M.D.

APPOINTMENT.

It is announced that *Dr. Harold G. Giddings* of Boston has been appointed medical examiner for the Massachusetts Accident Company.

NOTICES.

THE NEW YORK HEALTH DEPARTMENT'S SEMI-CENTENNIAL.

To celebrate the semi-centennial of the organization of the New York Department of Health, it is proposed to hold a commemoration dinner on March 8, 1916. The guests will include the Mayor, State Health Commissioner Hermann M. Biggs, Surgeon General William C. Gorgas, General General Rupert Blue, Professor William H. Welch, Doctor Peter Bryce and Doctor Stephen Smith, and Professor Charles F. Chandler.

All engaged directly, or indirectly, in promoting public health, such as physicians, nurses, social service workers, are invited. Subscription six dollars per plate. Those intending to participate are requested promptly to notify MR. GEORGE ROBERTS, Secretary, Commemoration Dinner, 139 Centre Street, New York City.

FREE LECTURES ON THE PREVENTION OF DISEASE.

A course of free lectures will be given during February and March by the Public Health Executive Committee of the New York County Medical Society at the Academy of Medicine on alternate Tuesday evenings and Thursday afternoons. The dates of the lectures and the topics to be presented are as follows:

Thursday, Feb. 24th, 3.30 P.M. "Health Measures in the Industries."

Tuesday, Feb. 29th, 8.15 P.M. "The Most Important Inherited and Acquired Evil."

Thursday, Mar. 9th, 3.30 P.M. "What the Medical Laboratory Does For the People."

Tuesday, Mar. 14th, 8.15 P.M. "Better Eyes and the Prevention of Blindness."

Thursday, Mar. 23d, 3.30 P.M. "Woman's Health—Relative to Her Own Field."

The public is cordially invited.

CHILDREN'S HOSPITAL.

The Visiting Staff of the Children's Hospital will hold a clinical meeting in the amphitheatre of the Hospital on Friday, February 18, at 4.30 P.M. Subject: Exhibition of pathological specimens. Discussion of abdominal and retroperitoneal tuberculosis. The profession is cordially invited.

SOCIETY NOTICES.

SUFFOLK DISTRICT MEDICAL SOCIETY.—A meeting of the Surgical Section will be held on March 8, at 8.15 P.M., in the Boston Medical Library. Dr. E. Starr Judd of Rochester, Minn., will present a paper upon "Cholecystitis With and Without Stones."

CHARLES L. SCUDDER, M.D., *Pres't.*

MASSACHUSETTS GENERAL HOSPITAL CLINICAL SOCIETY.—The Society will hold a meeting Monday, Feb. ruary 21, at 7.15 P.M., in the Out-Patient Building amphitheatre. Program:

1. Demonstration of cases.
2. Differential Diagnosis and Treatment of Traumatic Injuries in the Knee-Joint, Dr. Abbott.
3. Torula Disease in Man (with lantern slides), Dr Elliott Cutler.

ELLIOTT C. CUTLER, M.D., *Secretary.*

RECENT DEATHS.

DR. GEORGE THOMAS JACKSON, who died rencently of pneumonia, was born in 1851. He was formerly professor of dermatology at the New York College of Physicians and Surgeons.

DR. B. L. MILLIKIN, who died on January 6, was a graduate of the University of Pennsylvania Medical School in 1879. He was formerly dean of the Medical School of Western Reserve University and at the time of his death was senior professor of ophthalmology and senior consulting ophthalmic surgeon at the Lakeside Hospital.

DR. D. HURLBUT ALLIS, who died at Springfield, Mass., on January 31, was born at Hartford, Conn., in 1862. He was a well-known dentist in Springfield.

DR. HUMPHREY F. BRACKETT, who died on January 31 at Brighton, Mass., was born in Maine in 1840. In his early life he was a railroad engineer. In 1880 he began the study of medicine and in 1884 was graduated from the Medical School of Boston University. He was, for many years, examining physician for the Brotherhood of Locomotive Engineers.

DR. ROBERT G. HORNE, who died on February 2 at Watertown, Mass., was born in that city in 1871. After graduating from the Harvard Dental School he had practised his profession in Watertown for twenty years. He is survived by his widow, one daughter and one son.

DR. SIR FRANCIS HENRY LOVELL, who died in London on January 28, had been for many years a distinguished colonial medical officer in the British Empire. He had served as chief medical officer of Mauritius, as surgeon general and as member of the executive and legislative councils of Trinidad and Tobago. He was created a baronet upon his retirement in 1901.

DR. LOIS FITCH MANSFIELD, reputed to have been the oldest woman physician in the United States, died recently at Santa Barbara, Cal. She was born in 1830 at Fayetteville, N. Y., and is said to have been the first to conduct an open-air school in this country.

DR. RUFUS ELMER DARRAH, died at Newport, R. I., Feb. 8, aged 54 years. He was a native of Fall River, Mass., and a graduate of the Harvard Medical School in 1890. He was a house officer at the Children's Hospital and at the Boston City Hospital, and assistant port physician and assistant resident physician at Deer Island in 1891. From 1893 to 1896 he was surgeon to the Boston Dispensary, removing to Newport soon after the latter date. There he practised since, being at one time a member of the Newport Board of Health. He joined The Massachusetts Medical Society in 1890 and retained his membership until his death.

DR. SILAS ARNOLD HOUGHTON died of pneumonia at his home in Brookline, Mass., Feb. 6, aged 51 years. He was born in Keeseville, N. Y., and was educated at the Boston Latin School, at Harvard College, graduating with the class of 1887, and at the Harvard Medical School, taking his M.D. in 1891. He had practised in Brookline since 1892. Dr. Houghton was a member of the American Medical Association, Massachusetts Medical Society, Boston Medical Library, Obstetrical Society of Boston. He is survived by a widow and two children.

DR. WILLIAM JOHN TEAHAN died of pneumonia at his home in Brookline, Mass., Feb. 6, aged 51 years. He was a graduate of the College of Physicians and Surgeons, Columbia, in 1901. He joined The Massachusetts Medical Society in 1908 and had practised in Holyoke. He is survived by a widow and two children.

ERRATUM.

In the issue of the JOURNAL for February 3 (p. 172) the name of the lecturer was, by error, omitted from the report of the first lecturer at the Harvard Medical School on "Chronic Ulcer of the Duodenum and Stomach." This address was by Dr. Charles L. Scudder, whose name should have been attached to the report of his remarks.